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WINTER 25¢

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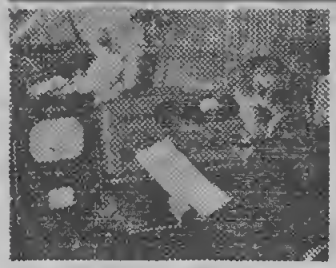

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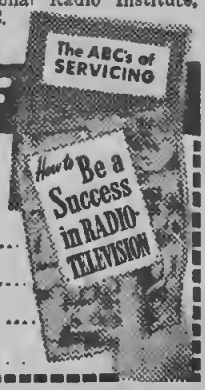

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STARTLING stories

Vol. 32, No. 3 A THRILLING PUBLICATION WINTER, 1955

A Complete Novel

THE SNOWS OF GANYMEDE . . **Poul Anderson** 10
They came to the hostile, frozen Moon of Jupiter to solve an engineering problem — and ran into a political puzzle

A Novelet

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The poor girl and the rich man's son both faced an age-old situation — and each with a different idea of happiness!

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George was certainly able to kill a bottle with a glance

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Her husband changed, but she'd married for better or worse

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Cover Painting by ED VALIGURSKY illustrates "Audrey's Moon"

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PRINTED IN THE U.S.A.

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A Science Fiction Department Featuring Letters From Readers

WE'VE decided to forego our opening editorial remarks this issue, because elsewhere in the magazine we're giving space to Poul Anderson's "future history." We thought that many of Anderson's readers would like to see how some of his stories fit into an over-all pattern, as presented on Page 29.

And we'd like to hear what you think of the idea of an author's working from a scheme of the future.

ETHERGRAMS

AN ANSWER TO CRITICS

by Gotthard Gunther

Dear Editor: My "Seetee Mind" has obviously antagonized a great many people. The summer issue of "Startling" carried the letters of Alastair Cameron and Martin Brilliant. The fall edition prints similar attacks by Donald Susan and Joe Gibson. It seems to me that all my critics—together with several other letter writers who communicated with me directly—should have curbed their impatience a bit. This is a series of four (!) articles, and my concept of "seetee mentality" cannot be wholly clear till the last piece of the series "The Thought-Translator" is published.

If you take a course in the art of writing one of the first things you are told is: If your subject-matter is complicated say one thing at a time. Never try to say several things at once. I followed this rule when I wrote "The Seetee Mind". I explained *one* relevant item about seetee mentality in the first article: namely its reversed character of consciousness. I did not mention *another* equally relevant fact. This is what my critics seem to miss.

Let me quote Gibson. Referring to individuals with seetee consciousness he says: "They could be just as blindly Aristotelian as we are in our own world with its non-Aristotelian factors. . . . Their green wouldn't be purple or anything else; it would be just as green as our green. Their whiskey would taste the same to them as ours tastes to us." I completely agree with Gibson. Their green would be "green" *to them*, and their whiskey would taste like whiskey *to them* . . . but *not to us!* And this "not to us" is the essential point!

In my first article I pointed out one, and only one, thing: the *difference* between the terrene mind and a contra-terrene mentality. The last article of the series will bring out the *opposite point:* the "hermeneutic" identity of the Aristotelian and the contra-Aristotelian mentality. How is that possible? Well, let me explain the whole problem by dint of a very simple analogy. Take any piece of writing, and read it. It convcys some dcfinite meaning. Now take the same writing, hold it against a mirror, and try to read it in the reflection. The ductus of the letters and their sequence is now reversed. However, it goes without saying that the meaning conveyed by the text in its reflected form is still the same even if we have difficulty in deciphering it—or can't read it at all. But although the meaning of the text is identically the same the picture of the text looks *to us* now very different. However, the letters would have their old familiar configuration if they were looked at by Lewis Carroll's Alice — *after* she had stepped "Through The Looking-Glass". An "L", for instance, would appear *to us* in the mirror as "⅃". But to Alice it would still appear as an "L". Now let us assume that *we* want to read Alice's writing but that we do not know how to decipher the reversed form of the text. The solution is very simple. We take a second mirror and read Alice's text in it. The second mirror reverscs thc ductus of the text again. The "⅃" of what we recognize as Alice's text would again appear to us as an ordinary "L."

The second mirror plays, so to speak, the part of a "thought-translator." Our text and the text of Alice *say exactly the same.* But we cannot read (understand) it in its reversed

(Turn to page 8)

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form. We have to re-reverse it.

I hope this illustration—which, of course, oversimplifies the problem—brings home to my readers the insight, that a seetee mind might think exactly the same as our terrene mind—but there is a gap of understanding and communication just the same. Consequently, Joe Gibson is wrong when he assumes that according to my theory the seetee mind is non-Aristotelian. Gibson confuses "non-Aristotelian" with "contra-Aristotelian"! It is a crass misunderstanding of the whole problem to assume that the seetee mind could be non-Aristotelian. A contra-terrene mentality could only be contra-Aristotelian. In other words: such mind would be *for itself* precisely Aristotelian but *for us* (i.e. the terrene consciousness) it would appear "in reverse," like reflected in a mirror, and *we* would therefore call it "contra-Aristotelian."

The concept of non-Aristotelianism comes in only if we develop a logic which tries to bridge the gap between the two Aristotelian varieties of pure thought. Such a logic would be basically a robot-logic—as is shown in my third article, "The Soul Of A Robot."

A good answer, Dr., but you're not out of the woods yet. We're still getting mail on your articles, and you'll find another letter below. Meanwhile, let's turn to a note from another "Doc."

LIKED SPACEMAN LOST

by Edward E. Smith

Dear Editor: Have just finished reading G.O.'s "Spacemen Lost."

That, my friend, is SCIENCE FICTION—one of the finest things you or anybody else ever published.—*Des Plaines, Illinois.*

Coming from the creator of Kimball Kinnison, that's high praise! And to spare our blushes, we're not printing the even more glowing letter you wrote to George O. Smith, the happy author. But enough of praise, and back to controversy, with . . .

HE'S FOR RELIGION

by Lowell Kennedy

Dear Editor: At last you have a new member in the fan mail club. And I've had a terrible time in getting this letter written. Every time I would think about it and look at my typewriter I'd get typewriter probia. But I fooled it this time. I snuck up on it before it had time to cast its spell on me.

I'm in the process of reading STARTLING STORIES. So far it's tops. "Simple Psiman" was very interesting. (I usually read the short stories first.) But I simply have to write this letter before I finish it. And since you are going to put this letter into print I'll get to the point, the main object, or if you prefer, the core of this letter.

I read the letter section of STARTLING right off the bat. And I came across a very interesting letter located on page 109, first column. I agree with the writer on three things: I am also an stf fan, in part with what he says and that religion is a legitimate subject for discussion. I would like to further his attempt for "laughs" and promote satisfactorily uproarious dissensions. So I'm going to take issue with what he said. I'm in the process of studying theology. So whether or not I'm qualified to do so, here goes.

Second paragraph . . . agreed. The fourth paragraph is the first one that I take issue with. He says he hasn't the slightest idea whether or not there is any validity in any of the religions. There is no validity in any except the one as put forth in the Bible. (No, no, no, I'm not preaching. I'm merely stating what I believe.) Proof? I suggest a study of history to begin with. Actually it's very difficult to prove. That's where the importance of believing comes in. What has convinced me of it is this: observation of conditions of the world from the beginning of history to the present; corruption of the world; scientists have been able to explain many things to us, but after they go back so far they are not able to explain the cause of the cause of the cause; just looking at plants, people, animals, the universe . . . that these things could have just happened is pure nonsense.

The writer says that religion is a "harmful social force." Religion HAS been the cause of wars and political upheavals. Or I should say that religion was the catalyst. Not that it was the fault of religion, but man's mad jealousy of religion's power over other men, or the misuse of this power. And I'll admit that it has retarded scientific advancement to some extent. But that's only because of people's foolish notion that you can't mix science with religion. My friends tell me the same thing. "You better not mess with science. You might lose your faith." While actually true science nowhere contradicts the Bible. God put science here for man to explore and to use it to make a more comfortable world to live in. One proves the other. However, I think that people are gradually growing up to the fact that religion and science can exist side by side in perfect harmony.

That the will and the intellect and the conscience lose their strength when you prop them with something is true in some cases. And therefore, he concludes that one becomes that much less able to solve a problem, or even to consider one. Obviously, however, he is referring to religion (and I refer to the one in the Bible) as the prop which removes that feeling of shame and makes one less able to solve a problem. NOT SO! A person with a guilty conscience is less able to solve a prob-

(Continued on page 109)

KNOWLEDGE
THAT HAS
ENDURED WITH THE
PYRAMIDS

A SECRET METHOD FOR THE MASTERY OF LIFE

WHENCE came the knowledge that built the Pyramids and the mighty Temples of the Pharaohs? Civilization began in the Nile Valley centuries ago. Where did its first builders acquire their astounding wisdom that started man on his upward climb? Beginning with naught they overcame nature's forces and gave the world its first sciences and arts. Did their knowledge come from a race now submerged beneath the sea, or were they touched with Infinite inspiration? From what concealed source came the wisdom that produced such characters as Amenhotep IV, Leonardo da Vinci, Isaac Newton, and a host of others?

Today it is known that they discovered and learned to interpret certain *Secret Methods* for the development of their inner power of mind. They learned to command the inner forces within their own beings, and to master life. This secret art of living has been preserved and handed down throughout the ages. Today it is extended to those who dare to use its profound principles to meet and solve the problems of life in these complex times.

AMENHOTEP IV
Founder of Egypt's
Mystery Schools

This Sealed Book—FREE

Has life brought you that personal satisfaction, the sense of achievement and happiness that you desire? If not, it is your duty to yourself to learn about this rational method of applying natural laws for the mastery of life. To the thoughtful person it is obvious that everyone cannot be entrusted with an intimate knowledge of the mysteries of life, for everyone is not capable of properly using it. But if you are one of those possessed of a true desire to forge ahead and wish to make use of the subtle influences of life, the Rosicrucians (not a religious organization) will send you A Sealed Book of explanation without obligation. This Sealed Book tells how you, in the privacy of your own home, without interference with your personal affairs or manner of living, may receive these secret teachings. Not weird or strange practices, but a rational application of the basic laws of life. Use the coupon, and obtain your complimentary copy.

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THE SNOWS

Illustrated by
PAUL ORBAN

They came to the hostile, frozen Moon of Jupiter to tackle an engineering problem—and ran into a political puzzle

OF GANYMEDE

A Novel by POUL ANDERSON

I

THREE dead men walked across the face of hell. Their feet groped past frozen rock, now and then they stumbltd in the wan light, and always they heard the thin, bitter mumble of wind and felt the cold gnawing at their flesh. Around them there was death, naked stone reaching for a cruel sky of stars, a lean, poisonous whirl of snow which was not snow that whipped about them and then lay still to crunch under their tread. Jupiter was low in the south, a great shield which glowed amber.

They had been walking for a long time now, it seemed like forever, and ahead of them was nothing but another endlessness of walking. Speech had died within them. Their feet were numbed clods which rose and struck the ground and rose again. There was so little awareness

left that they did not feel the small jarring of their boots against rock and snow. It was very quiet.

Hall Davenant wondered dimly if he had not always been walking from nothing to nowhere, across the snows of Ganymede, with Jupiter enormous on the horizon and the stars cold overhead. He wondered if he had not dreamed all his past, if Earth and Luna and mankind were not the fleeting vision of the only life in the world as it stumbled mad through desolation.

Yamagata spoke. After so long a silence, it was a shock to hear his remote, toneless voice. "We're not going to make it."

There was another stillness while Kruse found words. Then: "Doesn't look like it. But there's no point in sitting and waiting."

Pick-up-your-right-foot — glide — down! Pick-up-your-right-foot — glide down!

"Not the way we're going, we won't," said Yamagata. One gauntleted hand jerked toward the gauges on his shoulder. "Look. Oxygen for barely two hours more. Juice for maybe three, but it's no use staying warm if you can't breathe."

"Oh, well," said Kruse. "We weren't going anywhere anyway."

Pick-up-your-right-foot — glide — down!

There was a time, several thousand years ago it seemed, when Davenant could not have listened to them talking thus without a shiver in his guts. But cold and hunger and weariness had dragged at him so long that it didn't make any difference now.

His companions looked blocky and inhuman in their helmeted suits. It was as if they were demons leading him into darkness. But it didn't matter now.

DREAMILY, Davenant considered all the hope and strength which had once laid within him. He had meant to be a soldier in man's finest war, the fight of all men against a blind and indifferent nature which had brought their kind forth without caring. But she was too strong, he thought vaguely; one casual giant shrug of a planet's shoulders, and her parricide children were tumbled into ruin.

No—it wasn't the way an Engineer ought to be thinking, he told himself. Even at the gates of death, there should still be pride. But Ganymede had stripped it from him, until he was nothing but a blindness lurching it knew not where.

Yamagata continued, almost absentmindedly: "We might be headed in more or less the correct direction. We might get a decent reception if and when we arrive."

"Or we might get shot down," said Kruse. "Forget it."

"They may be just beyond the next hill," said Yamagata. "Or they may be —shall we say—three hours off. And we have oxygen for two hours."

Pick-up-your-left-foot—glide—down!

"Now, our information is a good deal more important than any one of us," went on Yamagata. "The Abbey has got to know. All right, I have an idea."

Kruse slipped on a sheet of ice. He caught himself wearily, his fall was slow, and he got up without bothering to curse.

"Torvald, you have people at home, don't you?" asked Yamagata.

"Yeh," said Kruse. "Parents, couple of sisters. And there was a girl who—never mind."

"How about you, Hall?"

"Not to speak of," said Davenant mechanically.

"Nor I. And you're younger. Wait a minute." Yamagata stopped. The others went on for several long low-gravity paces before their slowed brains brought them around again.

Yamagata's face was like wrinkled yellow cloth in the pouring Jupiter-light. It had a little smile as he peered through his face-plate. "They'll stick my name in Heros' Hall or some such foolishness," he said. "What I wish you'd do, if you live, is drink a beer for me at the Beacon in Luna City."

"Wait a minute—" Kruse took a step toward him, but was too late. Yamagata had already turned off his oxygen valves. Now, quite simply, he fumbled at some screws and lifted his helmet.

Moist air within rushed out in a freezing cloud. Blood bubbled on his lips, ran from his nose and ears as pressure dropped, and congealed. He swayed for a long time before toppling.

The face, under its sudden mask of ice, was puffed and distorted beyond humanness. Kruse stooped over. Even through the bulky suit, he could be seen to shake.

"He shouldn't have done that," he mumbled. "He shouldn't have done it." The wind slipped under his voice, a ghostly whistle.

Davenant felt ill. But his training rose within him. This was part of what it meant to be an Engineer. At the very least, Yamagata had returned that knowledge to him.

"He gave us each—an hour's oxygen," he said.

"Yeh. I wish he hadn't."

"*Somebody* has to make it, if that's possible at all." Davenant felt tears on his cheeks. "We're wasting time standing here."

"I—suppose so, kid."

Kruse turned the body around and unclipped the bottles and accumulators. Then he laid Yamagata out—the arms were not yet too rigid for him to fold the hands across the breast, but he couldn't close the bulged-out eyes. There was nothing else to do. Rising, he helped Davenant fasten on the new equipment.

"Let's go," he said.

They went around a high dark bluff, and the body was lost to sight.

After another while, Davenant said: "I wonder if we shouldn't do the same. One survivor is better than none. We could match for it."

"No," said Kruse. "That's cutting our number too low. Come on."

Davenant shook his head, as if he had been struck. But the shock had given him back his manhood. As he walked, he could even remember, and he tried to sort out how it had begun. Take it from the beginning, back at the Abbey—

Pick-up-your-right-foot — glide — down! Pick-up-your-left-foot — glide — down!

II

SEEN from outside, in the harsh bright flare of sunlight or the deep soft blue which poured from Earth, the Abbey was a fantastic witches' castle, perched on the cruel heights of Archimedes Crater like the nest of some inhuman robber baron. It was built of native stone, great rough-hewn blocks forming towers and walls of immense thickness. All of it had a purpose, aimed at the future—spires for observation and testing, walls and roofs to shut out raw vacuum. But in appearance it was still archaic. It looked as if it had always been on the Moon.

There was a road winding up to it, and a landing field for local rockets; further back was a spaceport, where the shining ships were like spears poised at heaven. There were also guns and arsenals and launching racks for guided missiles, but they were hidden, and nothing was said about them. They had been stocked against a day of trouble which might or might not come.

Inside, there was an endlessness of rooms and passages, burrowing deep into the ground or climbing to the highest towers. Some of these were for maintenance—food, water, air, power. In case of need, the place could be made self-sufficient. Others were storerooms; still others were laboratories where testing and research never ended; the rest were sleeping chambers, refectories, assembly and recreation centers.

There was always sound here—the whisper of ventilators and engines, footfalls, talk, music.

This was Archimedes Academy, headquarters and training school of the Order of Planetary Engineers. Few called it anything but the Abbey.

Hall Davenant walked down a corridor. It was of dressed stone, high and

vaulted, the tapestries and murals and fluorotubes never quite lifting its cool gloom. He walked fast and crisply, his boots slamming in pride on the flagging, his gray tunic and trousers forced into a painful neatness. That was the dress uniform of Field Service.

His shoulders bore the silver comets of Tech-2 rank, and on his breast was the helium-atom insignia which said his specialty was nucleonics. He was a young man, with a young man's openness in his rather long face, blue eyes, yellow hair close-cropped in the approved Engineer style.

He passed a couple of cadets, teen-aged boys who saluted him with bone-cracking smartness. He responded, thinking that cadets were a nuisance, always going through the rituals. For of course seniors had to conform before them. That was part of the training. It did not occur to him that he had graduated only three years previously.

Further on, he met an elderly labman in the loose robe and short beard affected by that service. This one had the gaunt, deep-burned features of a man who had been in Field in his younger days and retired to the Abbey—teaching, research, administration—when his body could no longer take deep space. He stopped Davenant, who knew him slightly. "Hear you're going to Jupiter," he said.

"Well—yes. Survey only, this trip."

"I know. Just wanted to ask you to pick me up some samples of green callistite. I've used up all we had, and want to run some more tests on it. Damnedest stuff I ever saw."

"Different geology, different minerals, within limits," Davenant said tritely.

"I know. And you tell me how we're going to sink shafts fifty kilometers deep without knowing the properties of the strata. I lost two months' work on Mars once, because we didn't know just how friable the sandstone around Thor was. For God's sake, spend a little time with a sonic probe before drawing up your specs!"

"Certainly."

Davenant got away as fast as he decently could. After seven years of training, he thought, and three of Field Service—Venus and the Belt—he ought to know the elements of his trade!

Still space was big, and other planets could be unearthly in startling and deadly ways. You were never sure. An Engineer always walked with his life in his hands. The labs were there to give him as firm a grip as possible, but even so the tablets in Heros' Hall were getting overly numerous.

HE CAME to the office he wanted and pushed the scanner button. The man inside, Lyell, saw his face and punched to open the door for him. He entered, came to attention, and saluted. Lyell was his new captain, and some of them stood on ceremony even among seniors.

The lean gray man waved him negligently to a chair. The office was furnished as austerely as most of the Academy. That had a definite purpose, like everything else; it kept the men used to discomfort, of which deep space had plenty. Field men did not marry if they wanted to stay in that branch. They lived at the Abbey, and their sprees when on leave were carried out incog. Eventually, of course, most who survived would acquire wives. Then they got apartments in the underground village at the foot of the castle, became labmen or technies, perhaps at last made the Council.

Lyell was old to be a spacer.

Few Engineers ever left the Order. Their seven years as cadets included mind training under some of the most skilled psychotechnicians in the Solar System, and when they were through, the Order and its *esprit de corps* were part of them.

Davenant looked around. Everybody else seemed to be there. Akihito Yamagata, small and quiet: geologist. Torvald Kruse, big and red-haired and cheerful, the son of a rancher on Venus: heavy construction. Rene Falkenhorst from Mars, tall and slender and dark: mechanical engineer. Yuan Li, a trifle on the portly side, always smiling just a

bit: biological engineer. Davenant himself, was atomics expert. And Arthur Lyell, stiff and gray, with enough all-around experience to qualify him for chief.

The men sat before the captain's desk, not speaking. Spacers learned to conserve talk, lest they exhaust the supply on a long tour of duty. There was a haze of smoke in the air from cigarettes and pipes.

I wanted to have a short conference with you," said Lyell. His eyes went around their circle. You'll be in centrifuge and so forth from now on until we leave, and once in space we'll be busy enough studying up technical details. As you know, we're off to the Jovian System on preliminary survey. The Jovians want us to terraform Ganymede and Callisto—a big job since the survey alone may well take a year. Not many comforts of home out there. I suppose you're all willing to go?"

Of course," said Davenant, and felt rather juvenile for having spoken.

"Not much is known about the Jovian System or its settlers," went on Lyell. "I'm having the library stat copies of what books and articles we have. The moons seem to be poor in natural resorces, so one thing we'll have to keep an eye out for is means of payment."

He must have noticed Davenant's faint shock, for he smiled and explained, "Yes, I know that sounds contrary to the spirit of the Charter. The Planetary Engineers exist to make space available for all men, regardless of race, creed, or political affiliations. Nevertheless, ever since the Order broke away from being a branch of the Union government and became an independent organization, it's had to pay its own way.

"So far, it's done well. We're by far the wealthiest and most influential private organization in the System. But a whole job of planetary transformation is so costly that we can't go into the red. The Jovians are poor in fissionables, and will probably be unwilling to part with any, so we'll look for other resources. In fact, we may have to set up some industries for them to make things we can use to pay the Order. Bear that in mind."

"We always need small spaceships and machinery replacements," said Falkenhorst. "They should be able to make those."

"It's a thought," said Lyell. "But what I most wanted to emphasize was this: you know the Order is strictly nonpolitical. Events have justified us. During the late Humanist Revolution, for instance, we were the only major group left undisturbed: We cut loose from the government because we foresaw trouble coming. Well, it came, and it is still going on, and things are going to get worse before they get better. If the Order is to survive the anti-scientific reaction building up on Earth, it will have to stick by its policy.

"That isn't going to be easy. Jupiter, as the only state outside the Union, is distrusted on the inner planets, and people won't thank us for building up their potentials. The Jovians won't like us, either, since we are inner planetarians. And from what little is known, Jovian society is such a turbulent mess that we'll doubtless be pulled twenty ways at once by as many conflicting power groups.

"But no matter what the provocation, remember your training and the rules, even if I should die and leave you on your own. The Planetary Engineers exist to serve *all* mankind. Sometimes that sounds vapidly idealistic, but it's the only way we can preserve our identity and privileges, the only way we can weather the storm that is coming. The medieval Church was another supranational organization. Its attempts to interfere with separate states led only to trouble and ultimate failure, but in its character as the friend of all mankind it was honored and powerful. When that power began to be used for personal and local ends, the Church broke up. It's an example we might all bear in mind."

He grinned and turned to a thick sheaf of papers on his desk.

"All right, gentlemen. Lecture's over. Now let's get down to particulars."

III

"DURING the lunatic years of the latter twentieth century the White American Church arose and became popular in the southern states of the old USA. Like the contemporaneous Pilgrims, it represented reaction—partly against the troubles which preceded, accompanied, and followed World War III, partly against the spreading of scientific method in human relations which those same troubles forced as the only solution. Unlike the Pilgrim Church, the White Church method was not an attempt to return to a fancied norm, but an eccentric leap toward an imaginary millennium. It was not elaborately rationalized, but violently anti-intellectual; it was not austere, but given to curious orgiastic rites.

"Some local politicians encouraged it so as to gain an organized, reliable voting body, and eventually it dominated many communities. Its intellectual isolationism caused it to go to yet further extremes, especially against the concept of equal rights for all races and the widening public appreciation of rational, scientific thought. However, as it grew in wealth, to become of some importance, it necessarily acquired an intelligentsia and a systematized philosophy.

"The increasingly effective program of undermining anti-rational organizations and beliefs, which was an important feature of the socalled New Enlightenment, eventually began to shrink its membership. The Second Conference of Rio had also made it obvious that before long the limited world government of the UN would be superseded by the complete federalism of the Solar Union which the White American doctrine considered intolerable.

"Imitating the earlier Pilgrim exodus to Mars, the Church decided to found a colony on Ganymede, the Jovian System being chosen for its remoteness and the general lack of competitive interest in settling it. A large ecological-unit spaceship, the *American*, was built, and a number of smaller ones obtained. The scheme was that some thousands of members would go out to start the colony while the rest stayed at home and worked to finance the project.

"In a decade or so of heroic effort, the city of X was firmly established (thus named to suggest the mysterious character of divinity and its dwelling). But meanwhile the financial drain had proved too great for the Mother Church. A membership which had hitherto been loyal broke away in large part because it was being impoverished by demands for money. Psychodynamic technicians of the government were adroit in using the discontent as a wedge for propaganda. By Twenty-one hundred AD, the Jovian colonists found themselves without a sponsor, no ties to Earth, almost completely cut off by the expense of travel to their system.

"They sent occasional observers and representatives to Earth, but there was no Union governor over them since they seemed neither to need nor want one. Occasional reports about them still come in, rumoring the evolution of a strange and ruthless culture which through a series of 'revelations' has been changed far from the original concept.

"But on the whole the Jovians have remained an isolated and unknown tribe. Their declaration of independence while the Union was confused by the Humanist Revolt on Earth, and their persistent refusal to rejoin, merely emphasizes their already accomplished secession from the rest of the human race."

DAVENANT switched off the microprojector that had been screening de la Garde's *Short History of Interplanetary Colonization*. He sighed. "He could have gone into more detail."

"He wasn't interested," said Falkenhorst. "He deals with what he considers the main line of history, the inner planets. Elsewhere he gives an economic analysis to show that nothing beyond the Belt will ever be important—not enough resources, too hard to colonize, the problem of survival won't leave any surplus energy."

"As a matter of fact," said Lyell, "the colony wouldn't have been possible at all it the American government hadn't quietly subsidized it—by such indirect means that the Church itself never knew about it. The Psychotechs foresaw that the attempt would exhaust and break up the organization on Earth. I've seen secret records that the Humanists made public."

"They really did get Machiavellian back in those days, didn't they?" murmured Yuan. "But seriously, there must be more information on Jupiter than this."

"Of course," said Lyell. "Plenty of it. But nothing coherent. Part of our task will be to get the whole picture as it is today, so you boys, at least, may as well start without preconceptions."

He took out a curved pipe and began loading it. "Yes, there's scattered information, but what nobody knows yet is the total cultural pattern. Just remember that man necessarily develops a different civilization in every environment if he stays long enough, and that what may shock you is normal, perhaps necessary, on Ganymede. Also—the Order stays out of politics!"

Davenant reflected on what he had seen and heard. He had been on Earth but little, even though the Engineers did some work there. Their main interest was space. The planet of his birth had become a stranger to him.

But he knew the hectic commerce and gaiety which was Luna City; knew the stiff dignity, the high sense of order and discipline, respect for intellectual achievement that characterized Mars; was familiar with the patriarchal, somewhat violent clan life which was developing on Venus since the invention of the cheap mobile reclamation unit.

But Ganymede would not be like anything he knew.

THE ship, *Let There Be Light*, hummed and murmured. Stars blazed against blackness in the vision

Davenant examined the weapon

ports. She was a cruiser, one of the new models which could accelerate most of the way and reach even Jupiter in a couple of weeks.

There were only the six of them aboard, with a full cargo of equipment and supplies. That was not cutting it as fine as an ordinary spaceman would think. Even though only Lyell and Davenant had the full specialized knowledge required for a certificate, any Engineer could operate a spaceship alone if it had not been too drastically damaged.

Lyell puffed smoke and squinted through a mesh of crow's-feet.

"One more thing might need emphasizing," he said. "We'll be there for a year, I imagine, and you'll want recreation from time to time. I'm afraid you'll have to do without it. One of the psychological mainstays of the Order's power is the impression of lawfulness and restraint its men give."

"We know that, Boss," said Kruse, looking hurt.

"Yes, of course. Still, on an inner-planet job a man does get leaves, he knows what amusements accord with local customs, and he goes incog anyway. None of that will be true on Ganymede. I doubt if they have red lights of any sort, for instance, and no disguise will be good enough in so small a commune. On a planet where hedonism was considered normal, where everyone was expected as a matter of morals to indulge himself, we would. But if, as I suspect, the Jovians have a Puritan code, we'll have to go them one better."

"Oh, well." Kruse grinned. "I figured as much, and built up a reserve the last time I was in Luna City."

Davenant felt a certain wistful envy of the man. He himself was too shy and introverted, he knew, to make a decent roisterer. An occasional fling in a licensed rec house, beer and gambling and whatnot was about his speed. If he were rich—but Engineers didn't get rich. All the profits of the Order went back into the Order and its development. Personnel from cadet to coordinator drew small salaries and no bonuses. The rewards were intangible—prestige, comradeship, a sense of being important to man's highest and finest adventure.

A watch-change bell broke up the discussion. Some went to sleep, some to their posts. Only Kruse and Davenant remained in the little saloon. The Venusian drifted across to a locker—they were currently in free-fall orbit—and got two bulbs of beer.

"This ends my ration for today," he said. "Care to join me, Hall?"

"Sure." Davenant took one, put the tube in his mouth, and squeezed. The cool tingle of it was refreshing.

Kruse hooked a leg around a stanchion and hung across the table from him. "If I'm not getting too personal," he asked, "why did you join?"

"Eh? Oh!" Davenant felt himself reddening, for no good reason. That irritated him, but he liked the big Venusian. "The usual. They saw my school and psych records, offered me an appointment, I took it. Isn't that what happens to everybody?"

"Yeah, sure. But you were only fourteen or fifteen then, not really capable of deciding such a thing. A lot of kids sign up because they think it's glamorous, and drop out after a couple of years. What made you stick?"

"What makes anybody stick? I was a poor boy. My father was one of the intellectual routineer class which was displaced by the Second Industrial Revolution, though he never joined the Humanists. He didn't like living off citizen's allowance and odd jobs—called it a handout. My people were Alaskans, with some of the pioneer tradition left in them. But his health was too frail for him to emigrate to Mars or Venus. I didn't want to go through that myself."

Davenant shrugged, not meeting Kruse's blue eyes. There had been other reasons—a girl, other women since then, even if he wasn't a successful chaser. Sometimes he wondered if a man ever really falls out of love. The pain stops, most of it, and presently a new love comes along. But isn't she merely added to the Pantheon?

"Why do you ask?" he said.

"Oh, just getting acquainted." Kruse shrugged. "Me, I was offered the same, and my folks urged me to accept. Parents' consent is needed on Venus. The family is more important there than it's become in Western Earth. It'd be something for the clan to brag about, a member in the Engineers. So I did join and I'm not sorry, but I think I'll resign after this job is over."

DAVENANT felt shocked. "How come? Don't you like it?"

"Sure. But I'm pushing forty, and it's time I raised a family. The lucky girl can't see living on Luna, so I've got my eye on a valley in the Hellfires. Under the Development Act, I can homestead the whole place. It's just rock and sand now, but give me a few years and it'll be the sweetest little oasis you ever saw."

"There's a breakdown coming," said Davenant. "The Humanists didn't stay in power long, no, but they were only one symptom. You can see corruption and personal government are growing. You're better off belonging to an organization which is above such matters."

"Now you're just parroting what your trainers taught you," said Kruse. "It's probably true enough as far as Earth is concerned, but Venus is a big place. Have you ever thought that maybe the Order is wrong? That maybe by setting itself above the realities of politics it's cutting itself off from its own roots?"

Davenant gulped beer and tried to settle a suddenly chaotic mind. It was not merely that Kruse spoke heresy. The Order permitted, even encouraged independent thinking for the simple reason that a rigid brain was no good for its purposes. But the Venusian, what he had seen of him, had never given the impression of being an intellectual beyond the requirements of his work. A skilled technician, yes, a big, laughing, hard-fisted tosspot, a collector of improper limericks, but he had no business dealing in disquieting philosophies.

Davenant was not especially narrow. He read widely, enjoyed music and chess, liked to think of himself as a bit of a universalist. But he realized now with some dismay that his intellectually formative years might have been too bookish, too concentrated on one ideal and in one way of life. He had crossed millions of kilometers and seen strange landscapes, but had he ever looked into the soul of a man—even his own?

"Let's have another beer," he said hastily. "We can borrow from tomorrow's ration. How about some chess?"

IV

SEEN from space, Ganymede was bleaker than Luna herself—seamed with mountains, pocked with craters, mottled dark and light over her sterile face. This far from the sun, her dayside was wrapped in dusk. Since she always faced Jupiter, the primary was gibbous or only a great scimitar while the sun was up, and at high noon a total eclipse threw blackness across the land.

As the cruiser approached, her radar picked up an object in orbit not far above the surface: metallic, to judge from the intensity of the returning signal.

"Odd," muttered Lyell. "I know the colonists broke up the old *American* and most of their other spaceships for the parts. I didn't know they'd established a satellite station."

He beamed a call, but there was no answer. Only the dry whisper of cosmic interference.

"Maybe a ship parked there?" suggested Yuan.

"Too big to be an ordinary ship. Well—let's come down the hard way, then."

It was a tricky job to ride a vessel as massive as the *Light* down a GCA beam, but Lyell managed it with hardly a bump.

When they were in their cradle, Davenant looked out and could not see much of X—just the spacefield, a radio mast, several buildings, and a cluster of other structures well distant. Most of it must be underground.

The sun was a tiny, blinding flame in

a sky nearly black. The tremendous edge of Jupiter dominated heaven—amber, streaked with dull reds and blues and greens and browns, splotches which were storms that could have swallowed Earth whole. The planet was so big that it seemed to be endlessly falling, about to crash ruinously on the broken face of its moon. Io was visible as a giant sliver to one side of the primary. The whole sky looked unnatural, like something seen in a dream.

A ring of hills shouldered starkly above the horizon, barely visible in the vague, cold, misty twilight under which the world seemed to lie. Davenant saw fields of snow that must be frozen ammonia, and part of the range looked as if it might be one enormous chunk of ice. The air was thin—nitrogen and argon, a wisp of methane and other gases.

LUNA had been near home when the first men reached it; Mars had had some life, at least; Venus had been a wind-howling hell, but rich with promise. This place seemed to hold a perpetual despair. It was, somehow, the grimmest scene Davenant had ever experienced.

Trying to shake off his depression, he pointed to the nearer buildings—long, low, featureless boxes with an odd bluish shimmer.

"I wonder what those are made of?" he asked.

"Ice, I imagine," said Falkenhorst.

Davenant blinked. "You mean solid water?"

"Surely," said the Martian. "There's a lot of it on the Galilean moons. It's a pretty good insulator, can be worked with a blow-torch or cast into molds, and if you make your walls thick enough and insulate them on the inside, they'll do fine at these temperatures."

Davenant nodded. He should have realized that. His training, the whole history of space colonization emphasized that other worlds were not Earth, and that a whole new approach was needed for each one.

"I'll bet they use the Absolute scale habitually here," he said. "It'd be too much trouble always to speak of minus a hundred and some degrees Centigrade."

"You're getting the idea," said Falkenhorst.

There was no provision for taking a spaceship cradle underground, but a small trac appeared, drawing a long plastitube two meters in diameter out of a valve in one building. It gripped around the airlock, and Lyell led his crew through it. They were all in dress uniform and wore their carefully schooled dignity on their features.

Emerging at the farther end of the tube, they stepped into a room which struck them with chill. The Jovians must have habituated themselves to such temperatures, to conserve power. Davenant, for one, had to take conscious control of somatic reactions and force his body to accept the conditions.

Ten guards were drawn up on either side of the entrance, an immobile line. They had the gangling, bulge-chested slenderness which was also characteristic of Martians—low gravity, low air pressure even inside the settlements—but this was exaggerated, for they were easily two meters tall. Under steel helmets, their faces were white rather than sun-darkened. Their uniform was a one-piece black coverall fitting the muscular bodies closely, boots, a belt supporting pistol and pouch; their heads were shaven, and they stood like robots.

It took a second glance for Davenant to realize that they were identical.

He jammed the sudden cold in his mind back out of consciousness. Keep up the act, keep up the act. An Engineer is never surprised.

Two other men were waiting beyond the guards. One wore the same black one-piece uniform, with a star glittering silver on the belt. But he had his hair. He was rather short and stocky, eyes gray and utterly cold, face harsh-scarred. The other man, long and thin and comparatively serene-looking, wore a blond beard, though his skull was bare, and a black robe with a white cross on the breast. He held back, bowing silently, as

the smaller man stepped forward and spoke.

"God with us! Welcome, gemmen. Had good trip?"

"Thank you, yes." Lyell inclined his gaunt gray head. "I am Captain Lyell of Archimedes Academy, in charge of this group."

"Cinc-4 Halleck." The dialect seemed to be a variant of rather archaic English, a curious blend of soft slurring and crisp, rapid delivery. The man gestured to his robed companion. "Angel-3 Garson." Another bow from that one. "Can we do y'all a service?"

"You might show us to our quarters," Lyell said coolly.

"Baggage? Unloadin'?"

"The ship is not to be touched," said Lyell. "There are things in her which could be dangerous to one not familiar with details. If you will lend us a porter, one of us will show him our personal effects."

Halleck nodded and spoke briefly into a wrist-phone. As he stood looking over the visitors, he could almost be seen to freeze. His eyes strayed uncontrollably to Yuan and Yamagata. He jerked them away only to have them rreturn. Davenant wondered why.

A GRAY-CLAD, hairless man entered from a side door. The first thing noticeable about him was his gigantic size and four arms. The next, and somehow most lasting impression, was of the inhuman vacancy of his face.

"Porter, gemmen," said Halleck.

At a signal from Lyell, Davenant led the way back through the tube. The giant followed wordlessly, and said nothing when the small heap of handbags was pointed out to him—merely picked them up and trudged back. There was no reason why the Engineers should not have carried their own things, except the matter of dignity.

When Davenant returned, he found Lyell talking with Halleck and Falkenhorst with the angel, Garson, who was asking some shrewd questions about the propulsion of the *Light*. Davenant recalled that the ion drive had still been experimental when Ganymede had been colonized.

"This way, please."

Halleck turned and led them out. A descending ramp wound into the body of the world. Davenant noticed that the identical guards were going before and after the group, and that their eyes were never still.

"We've assigned y' a suite in Sector Eight, border between cinc an' angel territory," Halleck said. "Y' can easily communicate with one service or t'other. Meals'll be brought there. If y'all'll gimme your pref'rences, I'll try to have 'em met, though we're not a rich colony."

"We don't ask for luxury," said Lyell. "Just remember that your dietary requirements may have changed slightly from ours."

The suite turned out to consist of six small bedrooms and a bath surrounding a larger common chamber. The furniture was simple, comfortable enough under low-gee conditions, but the whole place had a barren and empty look. After a moment's thought, Davenant traced that impression down to the completely unimaginative, inartistic appearance. Everything seemed to have been laid out with a ruler, and the lining plastic was drab gray. Oh, well.

Garson showed them the com-unit with which they could call up various offices when they wanted something, and gave them a collection of large-scale maps of city and satellite.

"Further reference works whenever y'all wish," he said. He had a meek way of speaking. "Imagine y'all want to get unpacked and rested. Call me when you wish a first conference."

"Cinc-1 should'a met y'all himself, I know," added Halleck, though without any air of apology, "but you'll see him soon enough. We've little ceremony here. God with you, gemmen."

He saluted crisply and backed out the door. His guards followed him. The angel bowed and went out last.

"Well!" Kruse threw his bulk onto a

low couch. "Charming hospitality!"

"Different mores," Lyell said absently. "That may have been their equivalent of a brass band and parade, for all I know. Don't go insisting on any special favors, boys. Pass all that through me." He frowned. "I'm afraid we've made a mistake right at the beginning."

"How so?" asked Falkenhorst.

"Bringing Yuan and Yamagata."

"What in space—" demanded Kruse. "What's wrong with 'em?" The two men spoken of retreated into expressionlessness.

"Nothing, of course," snapped Lyell. "But we should have remembered the idiotic race prejudice which was so important to the colony's founders. Apparently it's still present. Didn't you see how Halleck was reacting?"

"Race?" Kruse broke into a guffaw. "After some of the types they seem to've been breeding here?"

"Prejudices don't have to be logical or consistent," Lyell told him. "In fact, they usually aren't. It's sheer lucky chance that we didn't happen to bring a Negro Engineer." He glanced at Yuan and Yamagata. "I think you two boys can get by if we're discreet. A Mongoloid doesn't look that much different from a white man."

"A pink man, you mean." Yamagata grinned.

"It just points out how much we have to watch ourselves," said Lyell.

"Oh, well, if they get too offended they'll merely send us home," said Falkenhorst. "Let them freeze forever, then."

LYELL demurred. "This job is more important to the Order than you seem to realize. Not only the profit we stand to make, but this will be the first large-scale terraforming job we've had. The Mars and Venus projects were already well under way when the old corps was founded. We've handled big jobs, yes, but nothing of comparable magnitude. The value of this task in experience and prestige is inestimable. It'll go a long way toward getting us that monopoly of our kind of work which we need for power and safety."

Davenant, who had been doing some heavy thinking since his talk with Kruse, didn't quite like the tone of that. Was it so certain that the Order had a right to such power? He brooded over it while he unpacked.

Lyell called up the commissariat office and asked for dinner. It was brought by four-armed men, the same type as the porter, though not identical with him. The silence with which they served the meal was eerie. When Lyell asked one of them a question, he shook his head in an animal way and pointed to his throat.

"Either mute, or under orders not to speak," said Davenant. "I wonder why?" There was a coldness along his spine.

The food was mostly synthetic, not especially good, though some effort had been made to spice it. Kruse grimaced and reached for the decanter which experiment had shown to hold some alcoholic liquid.

"Go easy on that rotgut," warned Lyell. "Remember, our official doctrine is austerity."

Kruse shrugged. "It's awful, anyway. Lucky I stuck a few bottles of Scotch in my bag."

WHEN a service bell brought the waiters back to clear off the dishes, Davenant wondered if X lacked machinery for such work, or if live service had the same ostentation value it had on Earth. He consulted the city maps and decided it was no machinery. Logical enough. A precarious colony on an inhuman world didn't have materials or labor to spare for making luxury robots.

The maps were highly detailed, and it took a good many of them to cover the whole three-dimensional warren. Davenant gathered that this was the official level, where Cincs and Angels had their offices, and the lower echelons lived. Further down were the cells given to Sergeants, apparently the commoners who surely didn't have much sleeping space. Elsewhere were factories,

laboratories, crèches, assembly halls, storerooms.

One sector of X was marked, *Cinc-1-4*, but otherwise left blank. The rulers didn't seem to publicize the layout of their quarters, perhaps for fear of envious comparisons.

"I get a general picture of an oligarchy as hard-boiled as any in history," remarked Lyell, after considering the maps. "Those guards, for instance—obviously they're exogenes from one cell."

"Would the Jovians know that technique?" wondered Falkenhorst.

"Oh, yes," said Yuan, "It was used a good two hundred years ago by the old UN Inspectorate to create a corps of gifted secret service men. It's been public for more than half that time, though little applied. Identical heredity, identical training—the psychological effects are curious, for you get a completely devoted band of brothers. Then the four arms—that indicates the Jovians are well up on the newer methods of gene and chromosome manipulation. Either they got data from Earth or they developed the system independently, most likely the first since they have had some contact. I dare say the commoners, Sergeants, whatever you call them, are bred and trained and regarded as animals—specialized types. No, I can't say I like Jovian society!"

"That Angel—odd name!—Garson seems a pretty decent sort," said Yamagata. "How about calling him and pumping him now?"

"I don't know what his sleeping hours are," said Lyell. "But we can, I suppose." He went over to the com.

A ringing doorbell some minutes later announced their visitor. As Davenant opened the door, he heard a loud-speaker system filling the corridor with:

"— yes, the Lord is mighty, brethren, an' His hand lies heavy. Rouse not the anger o' the Lord, for he who's cursed by Him is cursed indeed. Rather show that meekness and obedience which're pleasin' unto Him—"

Sermons, yet! As Davenant closed the door he was glad it was sound-proof.

Garson's expression was a peculiar mixture of timidity and eagerness. When he was offered a chair, he sat on the very edge, and he was given to starting at any sudden movement.

"How official are you?" asked Lyell. "If you can speak for the government, I'd like to get some questions straightened out at once."

"We—" Garson fumbled for words. "My class is religious, y' understand. Mercy—" He hesitated, seeming unsure how to address the guest. "Sir," he finished. "We conduc' services an'—intellectual activities, too. Engineering procedure is our province as far as y'all're concerned, though we don't make policy."

"Good enough. You understand we are here only as a survey group, to find out if it will be possible at all to transform Ganymede and Callisto. It will take a good deal of work, a long time, to learn even that much, and we shall have to ask for help from your people."

"Crews will—be assigned, sir," replied Garson. "Equipment an'—" His voice trailed off and he combed his thin beard with nervous fingers.

"They will be under our direction, exclusively."

"If y' wish, sir. But—" The Angel paused again. "From what y' already know o' conditions here, sir, what—what hopes d'you have o' success?"

"I would rather not say," answered Lyell. "Not yet. Every world presents its own problem. How much do you know about earlier projects of this nature?"

"Very little, sir. I'd be, uh, grateful for what y' can tell me."

LYELL settled back for a lecture. "Well, then," he said. "Venus was made habitable by chemical treatment to get the poisons out of the atmosphere, by special bacteria strains which released oxygen from its compounds, and by hydrogen explosions to bring water to the surface. To mention only the most superficial aspects of a task which took more than a century. It is still going on as far as desert reclamation is concerned.

Plant types were developed to fit the new conditions, and as the environment changes with time still other forms will be introduced. Animal life was brought from Earth; or rather, its reproductive cells were, with exogenesis on Venus to start the first generation.

"On Mars, now, the problem has been in many ways different. There were no poison gases, and there was a little oxygen and surface water, although not nearly enough for human life. Still it was a start. More oxygen was obtained by bacterial process, more water by drilling, but it was still necessary to import a great deal—"

"Where from, sir?" Garson asked eagerly. "The fuel requirements must'a been fantastic if—uh—from Earth."

Lyell smiled. "No. From Saturn. The rings are mostly ice, there are even enormous meteors, or small moons of ice. It took several years' work, and was tricky to give a number of big chunks enough of a push to fall sunward and make them hit Mars just where desired. But—well, it was practicable. Large scale electrolysis and other treatment for some of it.

"The whole task was costly and enormous, of course, but when millions of people with atomic energy and the resources of a whole planet, even a small one, behind them, bend all their efforts to a job, it gets done. Oh, yes, much carbon dioxide was also required, to give sufficient greenhouse effect at that distance from the sun.

In spite of all this, Mars will always be a cold and arid world with a thin atmosphere. So the geneticists had to meet conditions halfway, by creating not only plants and lower animals, but even slightly modified human strains which can be comfortable in such an environment. And there are other complications, such as making up the gas which continually leaks into space. I tell you, Mars is a tough problem!

"It's being solved. On the other hand, no one would even try to give an atmosphere to Luna or Mercury. Our whole approach is different there, concentrating on things like more efficient airlocks and larger underground installations.

"The available materials and energy sources also determine a great deal. On Mercury or Luna, sun-power can be used directly or stored in capacitors. In the early days on Venus, the Hilsch tube was important, and wind power still is. On Mars, though, it was necessary to use atomic energy so extensively that its reserves are depleted and we must concentrate on the physics of low potential. We hope to help out when our solar-beam stations on Mercury are finished.

"But I freely predict that no one will ever found a real colony on, say, the moons of Uranus. There are no energy sources to speak of, no useful minerals, they're too far away for power beamed from Mercury. Not only is it not worthwhile, but it isn't a practical possibility. So you see, Ganymede and Callisto will have to be studied carefully before we can know what the chances are of making them habitable—or, indeed, doing anything with them."

Davenant's right shoulder itched. He longed to scratch it, but made himself sit impassively. Lyell's lecture was for a definite purpose—to impress, to gain a certain slight moral ascendancy. It wouldn't do to break up the act of mentor just to scratch. Inwardly, he squirmed.

"We've—ah—we've done well so far, sir," Garson said diffidently. "There're fifty thousand people in X alone, besides smaller cities an' isolated outposts. I think there's good hope."

"Possibly," said Lyell, with a note of calculated skepticism. "But do you have decent ore deposits so we can get structural metals? How much water is there in all? How much of every type of compound? How available is the oxygen? I don't think biological techniques will get it out for you. I doubt if any bacterium can be made which won't die or spore up at these temperatures."

YUAN murmured, "There might be ways, even so. But I'd have to have some figures before knowing if I have a

practical idea."

"What energy sources do you have?" Lyell persisted. "Can we tap internal heat, or isn't there enough? The sun is too far away to help much, even with power beaming. Offhand, I think the thing to do is sink shafts and start hydrogen-lithium fires down in them to warm up the body of the moon. Some of that energy could be tapped to make an outdoor lighting system. Then there is the problem of getting rid of the methane and ammonia.

"The surface area of Ganymede is something like eighty-five million square kilometers. You can see what a gigantic task we have. Interplanetary freight rates being what they are, it cannot be done at all unless most of the work and resources come from this world itself. Even if we take the job, the Engineers cannot supply the whole labor force. Most of it must be supplied from your own people, and can you spare so many? That calls for socio-economic analysis.

"In short, we are here now to see if you, yourselves, under our direction, can swing the job. Even the survey will require cooperation. Even for it, we may have to call on you for a great deal in the way of materials and manpower. We must have *carte blanche* to go anywhere and get any information. Are you willing to set that much at stake against the mere possibility that we can help you?"

"O' course," said Garson. "Y'd not 'a been asked ay-tall if we weren't. There are—uh—some facts which're—confidential, but the Engineers respect their clients' secrets, don't they?"

Lyell nodded. "If nothing else, we can show you some modern techniques," he said. "For instance, molar potential barriers to eliminate airlocks and all their clumsiness in fixed installations, more efficient food synthesis reactions, and so on."

Garson actually blushed. "Have you —uh—considered—the terms yet, sir?"

"The Abbey has already agreed with your representative on the flat rate for a survey. Payment for further work will depend on what we want and what you can afford. That can be negotiated later."

There was a little small talk then, but

[*Turn page*]

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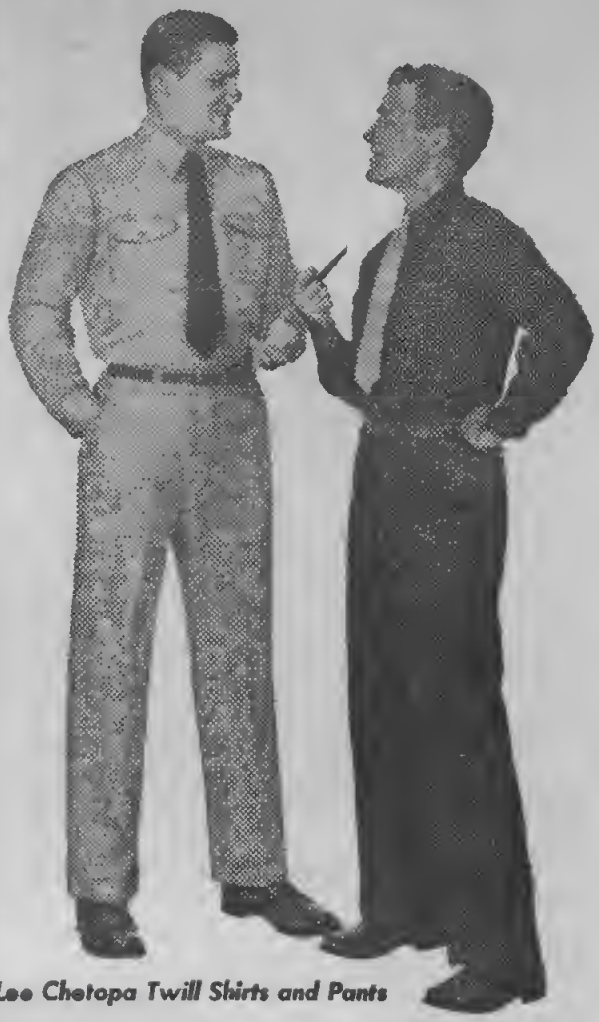

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the Angel was clearly shy of strangers and glad when he found an excuse to leave. He set an hour for the next meeting, at which a formal commission would begin the real business, and made his good nights.

Lyell stared after him. "I wonder what he's afraid of," he muttered, eyes narrowing.

"Us, maybe," said Yamagata. "Strangers coming into a pathologically xenophobic culture—hmmm." He stopped. "I just had an idea. Think these people know Basic?"

"I doubt it," said Falkenhorst. "Why?"

"Hall"—Yamagata turned to Davenant, an odd look on his face—"you have your general unit handy?" He was speaking the new, semantically rigorous language now. "Want to check the wiring in this room?"

Magnetic tracing of circuits revealed what he had suspected:—microphones, recorders, behind the plastic facing of the walls.

Lyell's mouth drew tight. "That's a violation of—"

"Different mores, Chief!" Falkenhorst's gibe held a note of strain.

"We can make an official complaint," suggested Yuan.

"Set up a resonator and burn the damn things out!" cried Davenant. "Or keep a magnetic field to wipe the tapes, at least."

"Hell," grunted Kruse, "leave 'em alone, but give 'em something really interesting to record!"

"No—no!" Lyell shook his head. "None of that. Not yet, not till we know more of the situation. I'm afraid we've already given away much we can ill afford, but I'll have to think about it. Meanwhile, keep to English for ordinary purposes, switch to Basic when necessary, but watch your tongues every minute."

Davenant looked around the room. He had known the inanimate savagery of planets, but this was the first time he had ever encountered hostility from men. The walls seemed to move together and close in on him.

GANYMEDE spun twice around Jupiter, a period of slightly more than two weeks, while Lyell's men were only starting their task, learning the bare elements of Jovian society. Most of their work was with the angels, studying maps and references in the library, conferring and asking questions. But they could hardly help acquiring unofficial information.

Garson, who seemed to have taken a fancy to Davenant, conducted him through the city. The factories and maintenance centers were fairly standard for a colony, though archaic in design and using an undue amount of human labor. That was performed by Sergeants under Angel supervisors. Watching a long assembly line of gray-clad, unspeaking men, Davenant felt a coldness in his stomach. He had never seen human beings so used.

"Why haven't you installed robot machinery?" he asked. "This could all be fully automatic."

Garson shrugged. "Large investment o' material an' labor in robots," he said. "Cheaper, easier, t' use men trained from birth."

So! The commoners were part of the machinery. They didn't count for more than the lathes and furnaces they manned. Davenant had that fact driven home to him when he walked through the human robots' part of town—endless, monotonous cells, almost devoid of individuality, no privacy anywhere, always the conditioning by broadcast sermons and minute regulations of conduct. The faces which looked at him meekly were masks; humanness had been rubbed out.

Not many women were in sight, and those he saw were muffled in shapeless gray gowns and veils. They had their own assignments in such lighter work as food-making and product inspection. And they were breeders. Garson justified their status with Biblical quotations.

There was little family life. Children

were taken young to the crèches for conditioning. On the basis of psych tests, some were picked for Angel and some for Cinc, to be raised in those services and never told who their parents were.

The angels were the priesthood, and spent their lives under a monastic rule which made the Abbey seem mild—though they were not celibate. They were also the intellectual and artistic class, the engineers, poets, scientists, philosophers of sorts. They compiled the data Davenant was now studying, and served as administrative advisors.

In spite of the humility which was drilled into them, they seemed more human, more individual, than any other class on Ganymede. Fat jolly Wilkins, shy dreamy Bliss, keen intense Jackson, small sardonic Hobart, earnest tongue-tied Garson—Davenant could get along with them.

As a group, the Angels were a power in the community, and had had their clashes with the Cincs. The Cincs, who were the rulers, had the upper hand, for Cincs of first and second grade were ex officio Archangels.

But sometimes the corps resisted them successfully. Garson told with relish the story of a few years ago, when Cinc-1 had tried to seize property owned by the Angels. They had refused to obey him, and had held out until a junta of his own subordinates had replaced him with a more reasonable man.

Davenant met the chief Cinc when the Engineers were invited to the Cinc area. Halleck conducted them, together with a troop of Hounds.

Lyell tried to draw Halleck out a little. "I take it these guards of yours are for show?"

"No." Halleck looked surprised. "Protection."

"From whom? The Sergeants?"

"Haw! The Sergeants know their place, I hope. A few publicly owned Hounds can keep them in order. But y' see, every Cinc above novice grade is entitled to his own corps o' guards, as many as he can support."

"I don't quite understand," Lyell said smoothly. "If the commoners aren't dangerous, why should a Cinc need a personal army?"

"The other Cincs' o' course!" clipped Halleck. "God gives victory to the righteous, but we men can't know who that is. Many're called but few're chosen. So all got to have their chance."

Lyell did not press the matter, but he traded a glance with Falkenhorst.

CINC territory was a change from the poverty elsewhere in X. The floors were carpeted, the walls and ceilings colorful with murals, the individual apartments spacious and luxuriously furnished. Davenant got the impression that each housed its own harem. Several other officers passed by, exchanging salutes with Halleck, and there was a flicker of hatred in their eyes. None had less than two bodyguards in tow, and each carried a side-arm.

A massive steel door was protected by machine-guns behind armor plating. Halleck strode up to meet the tall Hound who stood in front of the barricade.

"God with us!"

"Service to the Lord!"

"I bring Cinc-1's guests. Here's my pass."

The Hound studied it carefully "Yes, Mercy. If you'll leave y'r men an' y'r pistol here—"

Halleck smiled scarcastically and submitted. Davenant did not like the swift competent hands which passed over him in search of weapons. But his resentment faded when he was let through the door. The reception hall was a blaze of color and crude magnificence.

A servant bowed low. Female, young and comely, she was not dressed in any long drab gown. Quite the opposite. Kruse opened his mouth in an admiring grin, but snapped it shut as he remembered where he was.

"I'll announce you, Mercy," the girl said. "Service to the Lord!"

Cinc-1 Weller was short and rather stout, but the eyes in his broad red face were restless and cold. He greeted the Engineers with an ambigous salute and waved them to chairs. Davenant was un-

easily aware of the motionless guards standing against the wall.

"I trust y'r accommodations 're good?" Weller said. "Anything y' need?"

"Not just yet, Mercy," answered Lyell. "Before long, we'll be making our initial surveys and will want workers and equipment. But that can doubtless be arranged through the Angel corps."

"Course, course." Weller accepted a drink from a well-trained servant. "If y'all do need somethin' please ask f'r it."

"Well, Mercy"—Lyell rubbed his chin—"there is one thing we lack, and that is information."

"Oh. Can't the Angels give y' all the facts?"

"About physical data, yes," said Lyell. "But we need a more detailed social analysis than anything that's been given us. An important factor in deciding how much can be done here is the capability of the people themselves. For instance, it will be necessary to construct a great deal of automatic machinery. Frankly, Mercy, I'm disappointed that there isn't more already. Now the question is, can your particular culture stand the introduction of so much new technology?"

Weller's face darkened. For an instant, Davenant thought he was going to order his men to shoot the Engineers down.

He returned to a hard surface calm and replied judicially, "I don't see why not. S'pose y' mean assembly-line workers an' their like. What'll happen to 'em if their jobs 're automatized? That's really not your business. We can build such machines, put 'em at your disposal. What we do with 'em afterward concerns us alone."

"Perhaps," said Lyell. "Though consider, Mercy. Human assembly lines simply cannot produce what will be needed at the rate it will be needed. So there will at the very least be an interim where your Sergeants have no place to work—except out in the field with us. And there they will, frankly, be of little use unless you recondition and educate them. At present, I have the impression that most

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Poul Anderson's Future History

BACK in the early 1940's Robert A. Heinlein let it be known that he was writing stories according to a consistent "future history." All his work fitted into a pattern of history as it might happen, and an outline of that history was published so that readers could see the stories in perspective.

Poul Anderson, who wrote the lead novel in this issue, also uses such a history, and we're happy to publish part of it here.

Anderson emphasizes two points about the history: "(A) This is only a bare outline of a much more complex thing; (B) the dates given are not to be taken too seriously, for that would take the scheme out of the range of science-fiction prediction and into the realm of fantasy and prophecy, which is not one I care to inhabit."

He hasn't tried to make all his stories conform to the scheme and has no wish to do so, but on the opposite page you'll find the first 250 years of Anderson's history, which closes with the action in *The Snows of Ganymede*. Other stories already written but which cannot be shown on the abbreviated chart are *The Troublemakers*, 2205; *Gypsy*, 2815; *Star Ship*, 2875; *The Star Ways*, 3120; *Entity*, 3150; and *Symmetry*, 3175.—*The Editor*.

( ) — To be written **"*History of the Future*" — *Poul Anderson***

Date	Story	Events	Technology		Sociology
1950		Korean War	Hydrogen-lithium reaction Lunar bases	Cybernetics	Socialism in America Postwar period of chaos
				Needle gun	Period of recovery
		World War III: Defeat of Soviets	Robot files		UN greatly strengthened
	(Marius)	Civil Wars in Europe; the Great Jehad		Improved psychiatry	Religious fanaticism
			Interplanetary colonization		Privacy laws
		Expeditions to Mars & Venus		Human exogenesis	
		Conference of Rio	Airboat	Early psychotechnology	USA constitutional amendments
		African nations gain autonomy	Petroleum synthesis	Rover bomb	
1980					
		UN suppresses Brazil-Argentine War	Improved spaceships Oceanic colonies	Automatic factories	Growth of Psychotechnic Institute
	Un-Man The Sensitive Man	Extensive reclamation on Earth	General field theory		
				Shock & paralysis beams	Population control
		Anti-UN junta suppressed	Outdoor air-conditioning	Longevity	
		Attempt at dictatorship stopped	Ecological-unit spaceship		
2010					
		Abolition of national armies	Sun-power	Synthetic virus	The Second Industrial Revolution
		University of Luna Founded			
		Outer-planet expeditions	Hyperbolic orbits	Psychosomatics	
	(House in the Sky)		Air transformation	Flying homes	
			Power-beaming		
		Second Conference of Rio			Further steps toward full world government
		Venusian break with UN	Superdielectrics	Food synthesis	
2040					
		Currency reform			
		Suppression of Venusian nationalists	Small atomic motors	Space warcraft	UN space navy
			Interplanetary radio	Machine consciousness	
	The Big Rain				Planetary Engineering Corps
			Frictionless motors		
		Ganymede colonized			
			Electric blaster		Basic language invented
2070					
		Growing discontent on Earth due to failure to solve problems of 2nd Industrial Revolution	Military robots		The "New Enlightenment"
				Artificial regeneration	
			Automatic spacecraft		
	(Wolf)				Order of Planetary Engineers
			Asteroid colonies		
				Anthropoid robot	
		Anti-robot riots			The Encyclopedic Foundation
2100					
		Convention of Luna	Space liner service	Molar potential barrier	Solar Union founded
	Quixote and the Windmill	Venus made habitable	Traveling reclamation outfit	Synthetic nonprotoplasmic life	Growth of clan system on Venus
		The Humanist Manifesto	Minimal spaceships		
		Space ark to Centauri:			Pancosmic religion begins
2130					
		120-yr. voyage. A device to get rid of malcontents.	Interplanetary power-beam designed	Neural regeneration	Period of worsening conditions on Earth, leading to a great interplanetary emigration and development. Slow decline of Scientific progress, but much engineering work.
	Holmgang	Revelations of gov't corruption			
			Nuclear damping fields		
		Mars made habitable			
2160					
	(Cold Victory)	Abortive Humanist revolution			
2190					
	The Snows of Ganymede	Jovian dictatorship overthrown			

of them don't have the effective intelligence to use complex machines." After a pause, he added maliciously, "Of course, Angels and Cincs could be assigned to our crews but that would also disrupt your social structure."

"Hm—yes—problem there," admitted Weller grudgingly. "It calls f'r study. I'm sure a solution can be found."

"Another question," drawled Yamagata. "Is Callisto inhabited or is it not?"

"Why, no," said Halleck, when Weller failed to reply. "What made you think it was? We haven't expanded that much yet."

"There were references in books and conversation implying a small colony there," said Yamagata. "But nobody I asked would give me a straight answer."

WELLER spoke almost genially, as if glad to leave an awkward subject. "Oh, I see. Small group o' settlers there from Earth some twenty-five years ago. Came out t' escape troubles durin the Humanist affair. They couldn't make a go of it alone, so they came here, and joined with us. All but forgotten now."

He thinks fast on his feet, observed Davenant. *But he wouldn't be the chief in this nest of devils unless he did.*

"If I may say so, Mercy," put in Lyell, "your culture is an odd blend of the communal and the highly individualistic. Sergeants are trained to absolute obedience, but most of your new works are carried out by individual cincs, who patronize some gifted angel or some new construction project or the like."

Davenant nodded to himself. He had noticed as much, and decided the motivation was a compounded desire for power and prestige.

Lyell went on, "So far that system has worked well enough, because almost everything you could name had to be done anyway—mines started, outlying settlements founded, machinery built. But it will take the coordinated effort of all your people to transform these moons. Do you think the members of the Cinc class can be trusted to work cooperatively?"

"I'll see they do." Weller forced a laugh. "Y' go a long way to criticize us."

"Only as far as I must, Mercy. It's not my business to judge the way you have chosen to order your affairs to date. But insofar as that affects my job, I have a duty to make suggestions."

"We don't have t' employ the Order," Weller said coldly. "We can do the job ourselves, y' know."

"As you wish, Mercy."

Lyell was poker-faced, but it was clear enough that he had the whip hand. The Jovians were not capable of the enterprise. They lacked the special skills and resources it called. And as long as they were locked underground, dependent on a complex of machines and chemicals for the most elementary necessities of life, they could never amount to anything in Solar trade or politics.

The conversation at supper turned to the inner planets. Davenant noticed that Weller never lost a chance to needle Halleck—small personal remarks and sights which brought the Cinc-4's rage close to boiling over. It was not a comfortable party.

Back in their own suite, the Engineers dropepd into Basic for the benefit of the recorders.

"I can't say I'm overly fond of our hosts," declared Yuan. "Mechanized common people, fear and hate and ambition the prime motives of the rulers. I wonder if we ought to do their job for them."

"You know our rule about local politics," said Lyell.

"Seems you were doing your share of politicking tonight, Chief," Yamagata said slyly.

"I've the authority to make suggestions," answered Lyell. "If they go unheded, I can give a negative report which will make the Abbey drop the job. But that's all."

"There's something inhuman about the setup," declared Kruse. "People aren't robots. The Sergeant class simply can't be treated that way indefinitely. They'll either mutiny or degenerate to uselessness."

"I think—" Falkenhorst hesitated.

"Yes, you're right, Torvald. But there must be some safety valve, some outlet for them. I'd like to know what it is."

That was discovered two Earth days later. Davenant was going through some maps in the library, checking resources of fissionables with Garson's help, when the Angel yawned and stretched and said:

"Might's well quit now. Holy time comin' up, an' there'll be no work f'r forty-eight hours."

"A special service, do you mean?" asked Davenant, feeling the vague discomfort which mention of religious intimacies always gave him.

"Yes. Feast o' the Three Prophets. We have holy times once in a while, sev-'rl times an Earth year." Garson hesitated. "Why don't y' come, Hall? You look like y' could use some fun."

DAVENANT thought, *Some people have their own ideas of fun!* thought Davenant. But the prospect had a certain morbid interest. Doubtless it would be boring as a drill-mech. Nevertheless—

"Wouldn't people mind?" he asked. "I'm not a member of your Church, after all."

"Oh, no trouble. Stan' back to the rear at first. Later on y' can join in all y' want." Garson smiled shyly. "We might even convert you."

"Well—all right!" Davenant noted the time and place and went off to his supper.

The others of his band refused somewhat profanely to come near the service. They preferred Kruse's idea of wiping the recorders with a magnetic field and locking themselves in with some bottles.

Lyell approved, "If you want to go, Hall, it's not a bad notion. The more we can learn about these people, the better."

Davenant changed to a clean dress uniform and went down a series of ramps and corridors. As he neared the great assembly room, the press around him grew thick—commoners streaming in from all parts of the city, men and women and children mingled together. They were silent, but there was a curious eagerness on their faces.

The hall was a gigantic natural cavern which had been enlarged until it could accommodate the entire population of X. It was painted and tapestried into an explosion of color, huge streaks and jags of green, purple, gold, blood-red swirling on the walls. There were no benches, so everyone stood, but the floor was softly textured.

At the farther end, rising out of semi-darkness, was a sort of stage with an altar. All the Angels in X seemed gathered there, rank on rank of them like robed statues. The only Cinc in sight was Weller, who sat on the stage between his guards.

Davenant found a place against a wall. The gray-clad Sergeants who crowded around hardly seemed to notice the stranger. Their eyes were fixed with a curious greed on the stage, and they breathed heavily. Music was coming from somewhere, archaic syncopated stuff which caught at the pulse with a primitive force. Davenant wondered at the feeling of lightness and elation that seemed to be rising within him.

"O brethren—" It was all the Angels, a huge male chorus ringing like distant thunder between the ends of the cave. *"Praise ye the Lord, in Whom all are one. Thank ye the Lord for the gift of life and for His Manifold mercies."*

Effective, thought Davenant. *I wonder why? I've heard better in Luna City.* But as the chorus rose and swelled, he felt an odd lump in his throat. The man beside him was weeping.

Organ tones pealed like the voice of Heaven.

The sermon began, from the lips of an elderly Angel who only yesterday had been discussing gas-diffusion processes with Davenant. It started quietly enough, solemn as the music, with the Angel reciting the virtues of humility and hard work. Davenant found it rather reasonable.

Then the tempo picked up.

"An' yet who're we, mis-rable wallowers in sin, that we should walk this world? We who're slothful, an' greedy, an' lustful, we who's so blackened that only the blood o' the Lamb can ever wash us clean? I say t' y' all, the Devil is waitin'! On the Black Planet which is called Hell he waits f'r us, he's ready t' lick us down his hot gullet, down into the lake of eternal fire—you an' you an' you! Few are they who'll find mercy in the sight o' the Lord, an' great is the wailin' in Hell—"

People stamped their feet. Giant, dwarf, multiple-armed, tentacle-armed, the pure-human majority, they jerked, and moaned, and swayed with the rhythm of the words. Music rose around them, a sinister harrying of notes gone wild, and the Angel roared abomination down on them.

Amen! Amen! The Lord have mercy on me a sinner!"

Davenant's knees felt weak, his heart thick in his breast. He was doomed and done for, outcast, alone, every shame of his life was rising to mock him and he gasped with the pain of it. Everyone was groveling on the floor now, creeping toward the altar, wailing their miserable little sins to the world. And he, he, he alone was damned!

"Hallelujah!"

IT TOOK a minute before Davenant realized that the shout had been his own.

That brought him up short. A word screamed in his brain, and he doubled up against the wall and grabbed for its support. *Supersonics!*

Or subsonics? He wasn't sure. He couldn't remember in the confusion that bawled around him. But he knew that inaudible sound waves in the right frequencies do strange things to the human nervous system. The take-off of a rocket gives a man a moment of irrational dread. There are combinations of wave lengths which stimulate the thalamus, exalt the emotional response, while suppressing the action of the critical, reasoning forebrain.

It had been a standard part of psychotherapy for a long time. It was being used here on a giant scale!

Knowing it was a help. Davenant fought back toward sanity. He felt his heart pulsing with the words that rolled around him, he was frightened and joyous and enraged all at once, but it could be controlled. He licked his lips and wondered how long he would have to hold out.

"Praise ye therefore the Lord, for His mercy endureth! Give thanks and rejoice that He made ye!"

Hang on, boy, hang on, stay where you are.

In the seething of the mob, it hardly seemed incongruous that the Angels should suddenly be tossing out plastibottles. One landed beside Davenant. He picked it up, unscrewed the cap, and tasted as the others were doing. It burned in his throat. A hundred and fifty proof at least!

The music rose with a triumphant surge and thunder. He saw the nearest man turn, grunting, and snatch in a curiously blind way at a woman. She struggled for a moment, as if against some dying fragment of convention, then fell into his arms. He fumbled at the sleazy material of her dress, lifting it as he forced her toward the floor.

So that's their safety valve!

A hand plucked at his. It felt hot, and wet with excitement. Turning, he saw another woman, pulling at him. Disordered hair streamed past a face which glistened with sweat and contorted with laughter.

"C'mon, honey," she said. "Le's go."

He shivered and stiffened himself. "No—no, thanks," he mumbled.

Arms were around his neck. Even in low-gravity, her weight was dragging him down. "Y're a new un," she said. "C'mon, have some fun. It's awright."

She felt soft and hot against him. Helplessly, he stared down the open neck of her dress. Her lips sought his, greedily. It was like an explosion inside him. He sank to his knees and she laughed and pushed her body against his.

Wildly, he wanted to accept, nobody would know, and — and — Glancing around, he saw that the floor was littered with couples and that the younger Angels were leaping off the stage to join the party. There was a tightness in his throat and a hammering in his temples; he'd been a long time without a woman.

No!

He pulled himself free, shuddering. "Damn it, I'm an Engineer!" he gasped, more to himself than to her.

"Wha's the' matter?" she demanded insistently.

He thrust her away. "No!" he said harshly. "Go find someone else—"

Ugliness crossed her face. "Y' can't, huh?"

He wanted to show her otherwise, but only shook his head angrily. She laughed unpleasantly and moved off. It took him a full minute to recover his wits.

Davenant looked up at the stage then. Weller was rising to go. Either he had superhuman self-control or, more likely, there was a heterodyning vibrator mounted near his seat. Custom had apparently required his presence, but—

Suddenly he fell.

His guards swarmed around him. Peering into the shadows Davenant saw half a dozen men under one of the high columns. They were dressed as commoners, but stood aloof. He pushed closer, recklessly, and saw Halleck among them.

A MACHINE-gun chattered from the wings. Other Hounds came into view, methodically mowing down Weller's guards. They were in the majority, they operated with smooth coordination, and the whole fiight was over inside a minute. The survivors withdrew, bearing their wounded.

Halleck and his followers turned quietly and left the hall. Davenant made out the faces of at least two Cincs he had met. So several of them must have got together on this. A group conspiracy would be the onlv way, probably, to get past Weller's defenses. Now the junta would install a new Cinc-1 and—

Few if any of the brawling crowd had noticed what went on. They were too busy with their own affairs.

Davenant felt oddly light-headed. It must be the aftermath of the sonics. The only sensible thing to do was beat it back to the Engineers. He had no business mixing into this bloody mess which was Jovian politics, but his own impetus carried him along, his will gone.

Two men on the stage were looking down at the bodies which littered it. One wore Cinc uniform, one was an Angel. Both were high-ranking, to judge by their insignia.

Davenant got down on all fours and crawled toward the stage. The pairs and groups wallowing about him were cover of a sort. If he was noticed at all in the dim light he might be taken for a commonor. Or he might get a bullet in his skull.

Near the stage, he lay prone and called on his mental training. He had a degree of conscious control over the involuntary functions, he could drop the sensory barriers and heighten perceptions as some hysterics do without volition. Just enough to hear what was being said—

In Basic!

The shock of that turned his muscles rigid. For a moment, there was darkness before his eyes. It faded, and he heard the Angel speaking:

"So far, so good. But will Halleck be more manageable?"

"I've been his mentor since he was a child," answered the Cinc. "Consciously, of course, he distrusts me as much as does anyone else. But I've made it plain that I'm not after the highest rank, so he will listen to me, at least. And I know what buttons to push."

"We'll have to proceed cautiously. A whole culture can't be rushed into anything new." With a note of grim humor: the Angel added, "We ought to know that by now!"

"Of course, of course. But we're doing all right. We've come a long way since Callisto. Pass the word around—conference at 1800 tomorrow. Arrange it as an ostensible discussion of policy

with regard to these Engineers. Which it will be, in a way, though we want only our people in on it."

"All right. I'll send you an official memorandum. Let's go."

They walked off the stage. It was a long time before Davenant gathered himself together enough to leave.

When he entered his quarters, Kruse looked up with a rather bleared expression. "What's the matter, Hall? Seen a ghost?"

Davenant drew a shaky breath. "Yes. In a way."

Lyell stood up. "What do you mean?"

"I mean—" Davenant looked at the floor, then up again, to meet their eyes with a certain desperation. "I mean I've found out who really runs Ganymede."

"Oh. The service you went to? You mean the Angels are more powerful than they act?"

Davenant shook his head. "Cincs and Angels are played off—manipulated. It's the Psychotechs from Earth."

VI

HUBRIS, NEMSIS, ATE. So the old Greeks summed up the rise and doom and fall of men. It is a formula which has gone through all history.

Much partisan nonsense has been written about the Psychotechnic Institute. It was neither the only savior of a reeling civilization, nor the tyrant which strangled man's right to be an individual. It was a band of men and women who for generations strove toward a high ideal, wrought mightily, and at the last—as might have been foreseen—encountered problems they could not solve. Somewhat as the medieval Church nurtured Western civilization, the Institute was a kind of placenta for Technic society. In both cases, an outgrown matrix was becoming constrictive and had to be broken, and in both cases the act of breaking threw men back temporarily to disorganization and unreason.

The tragic flaw in the character of Institute personnel was only that they were human.

Scientific method was first successfully applied to social processes in the nineteenth century, when statistics were used to accumulate and winnow data. The basic-theoretical approach was developed in the twentieth century along several lines of attack—games theory, communications theory, general semantics, the principle of last effort, generalized epistemology.

The original Psychotechnic Institute eventually absorbed all similar groups. Devoting itself to study, it came up with some fundamental equations describing human relations. The approach was that of field dynamics. It discoveries about the psychomatics of the individual were of even greater ultimate importance, but centuries would pass before those bore full fruit.

What counted around 1970 was a precise formulation of certain basic laws governing the action of *groups*. *No* one pretended that the science was perfect; it had to admit large probable errors. But it was immediately usable, and the world of 1970 badly needed a guide.

Governments had long been relying on experts. It was only natural for them to continue doing so. As time went on, the Institute came to train nearly all the psychotechnicians, to inculcate them with its own ideals, and to keep in contact with them after they had gone into active service.

Political debate was conditioned by their reports. The tendency was for them to become administrators. The Instiute's leaders foresaw the growth of their own power, but they did not snatch after it. It came to them of its own accord, because only they could formulate policies for a world still wounded and feverish, policies which had a reasonable hope of success.

And so, step by step, came the economic recovery and improvement of all Earth. The strenghthening of world government, the slow withering of nationalism; education which, for the first time in centuries really fitted the needs of the

individual and of his society; the gradual decline of population on an overcrowded planet; the effective conservation of natural resources; raitonal economics; sane penology, generally available psychiatric care, critical thinking.

It was not easy. There were setbacks, interminable debates, deadly undercover struggles—but the foundation was being laid.

The reasons for the final breakdown of this progress were complex, but three main threads may be traced. First, there was a deep cultural resistance in a majority of Earth's population. As Asia became more and more the economic center of the world, this unwillingness gained power.

The road was, after all, long and hard, and it involved the scrapping of traditions which had existed since prehuman times. In many ways it went against animal instinct, and peoples without the technological bias of the West were inclined to draw the line somewhere and stick by it.

Second, the bulk of humanity simply was not fitted to absorb the new attitudes. Cold rationality and a high degree of self-abnegation do not come naturally to ninety-nine per cent of the race. Individual psychology suggested ways to get around this, but there was no way to recondition a billion and a half human creatures en mass.

Third, there was mass unemployment on a scale never seen before, as computers, automatons, and semi-volitional machines replaced men on one continent after another. Not only the unskilled laborer, but his highly trained brother and the routine intellectual—clerk, recorder, librarian, local administrator, laboratory assistant, the expert, some thousands of professions—was no longer needed.

The process took a long time to near completion, and there were many attempts to alleviate its effects, but nothing, not even the great emigration to Mars and Venus, was enough. At the nadir of the situation only some twenty-five per cent of the adult population of Earth was even partially employed.

OF COURSE, no one starved, a citizen's allowance was enough to assure living quite comfortably, but the genius class which could still work and get extra money for it was hated and envied. Yet the geniuses had to be paid, or not enough of them would have accepted the positions which still had to be filled by humans.

It is not good for a society when most of its citizens have no vested interest in its smooth operation. The atmosphere of restlessness and despair tainted even the leaders.

Out of all this rose Humanism, which amounted to a desire to restore a streamlined version of entirely imaginary "good old days." The Institute was shocked by the rapidity with which the movement grew. It was made the more dangerous by the general availability of superdielectrics, accumulators of fantastic capacity which could be charged from almost anything; cheap, simple energy sources for vehicles and weapons.

The balance of military power was shifting away from central government and toward the small, fanatic group. It was no longer possible to enforce order.

The Institute had had its own secret machinations before this. There was, for instance, the inoculation of a precalculated percentage of the cost-free synthetic food supplements with chemical contraceptive, followed by specious public explanations of the falling birth rate. There was the quiet subversion of the most inflexible archaist organizations. There was much more, which had been deemed necessary but could not go through the process of democratic agreement.

The new situation was ugly. Anti-robot riots, the lynching of technies and scientists; the election of intellectually corrupt representatives — lunacy was building up as rapidly and unnecessarily as—to quote a classic example—it did in the old United States between World Wars II and III.

The Earth sections of the Union government were calling less and less on trained men, going back more and more

to rule of thumb. Something had to be done!

And the field equations did not indicate a solution.

There is no reason to detail the increasingly frantic efforts of the Institute's leaders to stop the avalanche. Some of their methods were actually unlawful, and when this was exposed the results were evil. The naval mutiny, the Humanist Revolution and seizure of power, the withdrawal of Earth from the Solar Union—these are matters of record.

The Humanists soon found out, though, that they could not repeal history, could not abolish the technology on which men were now dependent. Mars and Venus backed the counter-revolution. The shaky Regents were overthrown and the new government rejoined the Union—but the seeds of interplanetary rivalry and distrust had been sown.

"Tame" psychotechnians could not be dispensed with, but their powers were rigidily limited. The generations to come would be turbulent, one might call them the adolescence of Technic civilization—an age of trial and error for such men of good will as groped toward a new and better basis for living. An age of conflict and greed for the short-sighted majority. But an age with a peculiar hectic brilliance of its own.

Analogies to post-Reformation Europe are tempting, but should not be drawn too closely.

What is of interest now is that at the time of the Revolution some of the Institute chiefs and their followers decamped to save their own lives. They had managed to seize an ecological-unit spaceship—it was the old Starshine, in orbit around Earth after completing the third expedition to Neptune—and had taken it into outer space.

No one knew why they did not go to Mars or Venus, as many of their colleagues did, nor was it known what had become of them.

Mankind in general had too much else to think about to worry over a few hundred refugees.

VII

"POLITICS," Lyell said when Davenant told him what he had discovered. "We stay out of this."

"Even if there's a—danger?" asked Yuan. "If the psychotechs get this system organized just the way they want, it could well become a menace to the status quo."

"As a scientist of sorts, you ought to be pretty sympathetic to the psychotechs," reorted Lyel.

"Maybe. Maybe. We need their skills. Could be Earth's made her biggest mistake to date in booting them out. On the other hand—I don't know." Yuan frowned unhappily.

"I think I follow you," said Yamagata. "Groups, organizations, tend to lose sight of their original purposes, don't they? The means to an end become an end in themselves. Look, oh, say at the Christian church. It started with a noble ideal, maybe the noblest man has ever seen, a universal brotherhood of love. After a few centuries, it was burning people alive for disputing its authority."

"That took longer than you think," said Lyell. "But I won't quibble. It may well be that Psychotech people have become embittered and fanatical. Their connivance at political murder today suggests it. Nevertheless, we don't let on that we have any inkling they're here. We proceed as usual, report the facts secretly to the Abbey, and let the Coordinator and Council decide what to do. If the Engineers don't stay out of affairs such as this, they'll end up as exactly the same kind of power-grabbing, intriguing bunch of crooks. Our job is to keep the scientific spirit alive. To reform planets, not people."

"Of course," said Falkenhorst, "the Abbey will want more facts than just the bare statement that—"

"Yes, yes. Keep your eyes open. But don't go playing spy. You haven't the training or aptitude, and the Cincs are experts."

"So are the Psychotects," observed

Kruse. "You realize that everything we've said in Basic, fondly imagining no one understood it, is known to them."

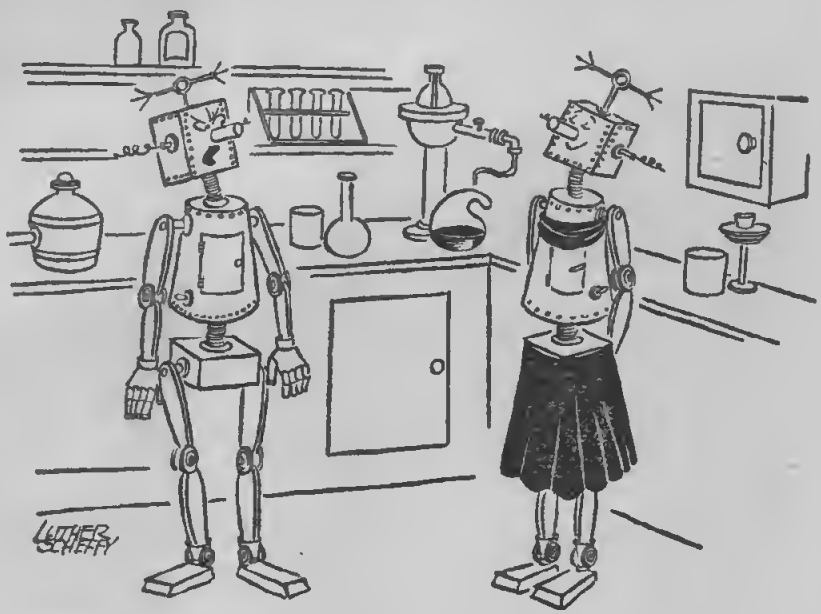
"Uh-huh. From now on, we keep the wiper going permanently in here. Let them wonder why. Also, it's about time we started demonstrating a few things we can do. . . ."

The announcement that Weller was dead and that Halleck was the new Cinc-1 came toward the end of the holy time. An added twenty-four hours of circus proclaimed to celebrate the accession. The Sergeants took it stolidly; they must be used to such sudden changes of masters.

Davenant continued his fact-finding in the library, since he wanted to see which of the Angels normally there excused themselves to attend the special conference. It was a shock when Garson was among them. That fumbling, blushing, stammering nonentity?

On second thought, it fitted. The psycotechs weren't interested in an outward show of power. They concentrated on getting into key subordinate positions—the men who gathered data and wrote reports, the men whose advice was valued by the policy makers. The Jovian rulers, a curiously innocent breed in spite of their mercilessness, could not be expected to know just how powerful the executive secretary of a committee was, for instance, especially if that man had the sense to be unobtrusive about it.

This also would explain why Garson had so casually accepted the Engineers' feats of instant comprehension and memorization during their studies. To him, that was the least part of mental training.



"There's more to it than just clothes, stupid!"

But had he, then, invited Davenant to the service with the idea of having him witness the assassination? If so, why?

While the Angel was absent the engineer took the opportunity to look up the historical files. There wasn't much about the original settlers of Callisto. They had merely claimed to be adherents of the outlawed Technic Party who had tried to establish themselves on the satellite and had failed because there weren't enough skilled spacejacks among them.

THEY had joined the Ganymedeans under an agrement which gave them all Angel status, permitted familiar con-

tracts to remain in force, and left their big ship their own personal property. That must have taken shrewd negotiation, but of course their leaders had been experts. Some had soon been given Cinc rank, and the younger generation among them was beig raised in the orthodox Jovian manner.

Still, Davenant was pretty sure that they arranged for their own children to be picked for special training, and for their women to get the more privileged jobs. There was no secret police here, for the society was too rigid to require one. A close-knit brand of conspirators could maintain itself without much trouble.

Now that he knew what to look for, Davenant could easily find the signs of their influence. There had been some radical changes quietly made in the past twenty-five years. The Sergeants were no longer an undifferentiated mass, but had been divided into grades, of which the higher echelons got a respectable though strictly utilitarian education.

The newer outposts had been organized under different lines from X and from each other. One was staffed entirely by Sergeants who had a regular family life, another by experimental mutant types, still another by Angels, and all under the very eye of the Church. A diveristy of cultures was breeding which must in time clash with and destroy the Church's petrified overlordship. The terraforming project itself was probably a psychotech idea.

So far, so good. Davenant had every sympathy with the notion of undermining Jovian society. But he wasn't at all sure about the ultimate aims of its new, hidden masters.

SOME three Earth days later, the Engineers went out into the field. They didn't bother unloading their ship, but jetted her directly to the camp site, a feat of piloting which must have made some eyes bulge.

A party of Angels and Sergeants, with a few Cinc bosses and their Hounds, arrived by motor sled to find camp already being established. It was a whirl of movement and action, with a score of swift sleek robot machines erecting shelters and workshops, guided only by men at the main control boards.

"Y're gonna drill here?" Garson asked timidly.

Lyell nodded. "I think this is a promising site for one of the H-Li burners. We'll take cores down to a depth of fifty kilometers and find out for certain."

"Fifty!" Garson gulped. "Won't a shaft that deep—y'll have to make it pretty wide, too—won't it cave in?"

"Not in this gravty and with this type of rock," said Lyell. "Anyway, it'll only be wide at the bottom, otherwise just broad enough to lower parts which our robots can assemble down there. It'll take longer to warm the surface with the fires burned that deep, but be far more economical in the long run. Also, right now we still have to find out just how much native heat there is at the satellite center and how available it is."

A self-operating 'dozer walked around a selected area, scooping away rubble with casual giant shrugs. A slim steel skeleton rose above it, and Davenant and Kruse hooked in the boring rig and a minimal nuclear engine. They could have done it faster if their Jovan subordinates had been trained for such work.

Falkenhorst set up his furnaces in one of the workshops and began turning out synthetic diamonds for drill bits. Yamagata's laboratory worked overtime analyzing the sections brought up. Yuan pored over the results and anounced that a biological approach to the atmosphere problem was not impossible.

"Of course we can't mutate from protoplasmic life," he said. "Theoretically we could make animals, but they'd have to have heat-producing cells to keep from freezing solid, and we want unicellular organisms than can multiply like mad. Rather than wait till the satellite is warm enough, I'm going to have the Abbey labs turn out some different things, which can live here as conditions are, getting rid of the poisons and releasing oxygen as natural metabolic func-

tions. Liquid ammonia in place of water, for instance."

"Y' mean y'all can *make* life?" Garson sounded shocked, and Davenant reflected what a good actor he was. The datum could hardly have been unknown to him, for synthetic virus antedated the Humanist Rebellion by more than a century and a half.

"Sure." Yuan peered at him from a stack of calculations. "Whole bacteria were assembled long ago. It was just a matter of reproducing and accelerating the chain of physicochemical reactions which led to the first life on Earth. Oparin had sketched that out as far back as 1930 or so. Nowadays we can tailor synthetic bacteria and protozoa to almost any requirements. The limting factor is merely the extremes of temperature between which such complex reactions as make up life will go on." He smiled "Nothing more than microscopic organisms have been made yet, and I see no reason why humans should ever be produced synthetically even if it is possible. Nature has a much more intersting way of achieving that result."

The Cinc who was with them looked doubtful. "It soun's blasphemous," he muttered. "Only God—"

"Oh, call it straight organic chemistry if you want to," snapped Yuan. "Just don't bother me now. I've got work to do."

The Cinc flushed darkly, and Davenant could almost read his thoughts—You damn slant-eyed—

Garson stammered a question which deftly turned the talk into safer channels.

"We'll have to set up an iron mine near here," declared Lyell. "You understand that our construction is only a portable testing rig, and that most of the terraforming materials will have to be manufactured on this world. According to your maps, there's a deposit not far off . . . Let's assemble some workers and go take a look."

The look involved driving shafts kilometers into a mountain. Blasting was of little value in the tenuous atmosphere, and Davenant used atomic energy to melt rocks loose, after which the diggers lumbered monstrously to clear away the rubbish.

"How d'you control the reaction?" inquired Garson. "I never thought anybody'd ever make atomic burners that small."

"Damping fields," said Davenant abstractedly. "Anti-radiation fields, too. It's the same development of wave mechanics as has produced the molar potential barrier and the frictioinless wheeldrive. In principle, these gadgets tap some of the reaction energy to control the reaction itself through field baffles. Lead shielding is obsolete except for special purposes."

"Oh." Garson's eyes rested on Davenant. Behind the face-plate, his countenance was a mask. "So y' can damp, shut off a reaction from outside?"

"Of course. How else could we burn, say, hydrogen and lithium instead of just blowing them up?"

The team went on to another site. Lyell used the opportunity to go into space and check with instruments.

"A big ship there in a low orbit, all right," he said. "Must be the *Starshine*. She's cold as charity, too. No one aboard."

"Emergency exit for our psychotech friends," guessed Kruse. "No point in leaving her there, rather than breaking her up for scrap unless she's fully equipped. So when they came to Callisto, they must have had Ganymede in mind all the time."

Yamagato nodded. "These people never did anything at random. When the debacle came, they must have figured their best chance to get back in the saddle lay through Jupiter. Mars and Venus have too much contact with Earth for them to operate secretly."

"But the people who came out here—" began Davenant. "They knew they'd never live to see their plans mature. Why that tremendous sacrifice for a time long after they were dead?"

"People are that way," said Yuan.

"What worries me is their ultimate

plans," said Falkenhorst. "Those here now must realize that they've little or no chance of persuading the inner planets to reinstate them by using sweet reasonableness, or even some obscure socio-economic manipulation. And the Institute did advise war from time to time as the best solution. Like when they got the old UN to put down the Venusian nationalists by force. I have an uneasy notion they plan to make Jupiter a—Prussian state, and then under the guise of Jovian conquest . . . With modern weapons, it wouldn't be pretty, whether they won or lost."

Kruse said, "They always preached against war except as a last resort. The Venusian campaign was a small affair. I ought to know—my great-great-grandfather was a UN marine who fought there and settled down afterward."

"But attitudes change," declared Lyell. "The psychodynamic techniques are only methods for attaining given ends. They say nothing about the desirability of any aim. If the Institute people have acquired an old-fashioned power hunger, they'll rationalize it to themselves, but they'll be as dangerous as any would-be conqueror." He shrugged. "Out of our province, though."

THE initial survey took a little over three months. Then the expedition returned to X to make preliminary evaluations of data and plan the attack on Callisto. Terraforming Ganymede certainly looked possible. The question still was whether or not Jovian society was able to avail itself of the possibility. The answer to that involved further sociological study.

"If the psychotechs think it can be done, I'm inclined to agree with them and let it go at that," said Kruse. "They know this moon better than we ever will."

Lyell shook his head. "In the first place, we have to keep up the pretense of not realizing the true situation," he replied. "It could mean trouble if they found out that we do know. In the second place, the Abbey would want an independent opinion anyway. In the third place, how do you know they *want* the job done? Our trying and failing might be what they really have in mind. It could have a psychological impact, a disappointment and bitterness, which they could very well exploit."

Davenant felt again a chill of foreboding. He wasn't fitted for this atmosphere of unsureness and hostility and dark cross-currents. A wave of homesickness for the clean bare slopes of Luna and the comradeship of the Abbey nearly overwhelmed him.

He wondered what the Cinc spies thought of their suddenly blanked recorders. The natural interpretation would be that the Engineers had discovered the hidden instruments and had simply chosen this means to express indignation. But how natural was the Jovian mind?

He returned to the library. There was little he could do at present except soak up as many facts as possible, for the Academy's experts to take from him later. And the long, quiet chamber was the only place in X he really liked.

Garson looked up from a projector as he came in. There was no one else present. "God with us," he said shyly.

Davenant nodded and sat down next to him. "What are you studying now?" he asked.

"I'm s'posed to be educating myself in metallurgic theory, so I can work better with your team. 'Fraid it's not my strong point."

Davenant looked at the projector. It had what seemed like an unnecessary number of controls. "Why those?" he asked, pointing.

"Oh, that's t' save spools One tape can hold a lot o' diff'rent texts, same as one phone line can carry a lot of diff'rent messages. These buttons are t' unscramble, select the one I want."

"Hmmm—" Davenant hoped his excitement didn't show. "That's a novel idea. When did it come in?"

"Oh, 'bout fifteen, twen'y years ago. Why?"

"J-j-j—" Davenant swore at himself

and brought his tongue under control. "I was just wondering."

But he knew now where the psycotechs kept their secret records! Right here with all the others, safely scrambled in with a code modulation known only to the conspirators. Best place on Ganymede!

The Angel sighed and looked at him steadily. "You know, don't you?" he murmured—in Basic.

"Know?—" For an instant, Davenant failed to understand what Garson meant. Then shock held him rigid.

The Angel smiled. "Why bother, Hall? It sticks out ten kilometers. Ever since you started blanking those spy machines, and some of your questions, the way you react to key statments, almost the way you walk. You know who we are."

"You—I don't get it. What do you mean?"

"Never mind. This isn't a very safe place to discuss such things. Just tell the others what I've said, and quote me to the effect that we don't care. It was foreseen that a group of alert, intelligent outsiders, coming here especially to study this place, would most likely discover our secret. The probable reaction of your order has already been estimated and allowed for. I *wanted* you to see that religious ceremony and assassination, to realize more fully what a brutalized culture this is and how right that it should be taken over and changed."

The mask was off. There was no more hesitation, no more awkwardness in Garson. It was a mature and calmly assured man who spoke.

"I know we've been party to some nasty affairs, like the last change of dictators. We'll continue in that line for a while, because we must. Just remember that our ultimate aim is still what it always was—to establish sanity so firmly in all men that that sort of thing will be forgotten and impossible."

Davenant sat unmoving. Garson returned quietly to his book.

It might have been minutes later, or nearly an hour, when the tramp of boots rang in the corridor outside. Davenant glanced up from the screen which he had been mechanically studying, and saw the door fly open. A dozen Hounds made their entry. Long, low-gee jumps ranged them around the wall, with guns pointing inward. A black-clad Cinc-3 followed them.

"Don't move," he said. "You're arrested."

"What?" Davenant leaped erect. Three staring muzzles followed him. "What in Sol—"

"Hands up!" snapped the Cinc. "Conspiracy 'gainst the church. 'S is a killin' matter."

DAVENANT sucked in his breath and willed steadiness back to his shaking form. His mind leaped with an unnatural clarity.

"You can't arrest me," he said. "I'm a Planetary Engineer. Our contract with your government, which has the force of a treaty, gives us immunity."

"Can't I, though?"

Davenant shrugged. A tiny germ of panic crawled deep in his skull, but his voice lifted coldly.

"The Order protects its own. If you molest me in any fashion, they'll hear of it at once on Luna. We have our methods of communication."

Sheer bluff, but he counted on the scientific illiteracy of the cinc class, and the awe which his team's work in the field had produced. "How would you like to have your brain burned out from space?" he went on. "What defense have you against robot bombs sent clear from Luna? If you don't let me go back to my quarters you'll soon find out that the Order is not helpless."

For a moment the Cinc hesitated. "Don' do it!" screamed Garson. "There's women an children here!"

That worked. The Cinc detailed three Hounds to escort Davenant back to his suite.

Four of the other Engineers were already there. Kruse showed up later, arrogantly demanding that the guards outside the door let him in. He had been set on by three Hounds down in the main power room, but he had also been in-

volved in clan feuds on Venus as a youngster. From his tunic he extracted guns and passed them around.

"What brought it on?" groaned Yuan. "What's happened?"

"I've got a hunch." Davenant set up his testing rig and checked the room cir-suits again. "Yeah. Halleck's idea, I'll bet. He's not stupid. See this pip? That's a metallic mass in the adjoining suite which wasn't there before. When we started wiping his tapes, he must have set up an old-fashioned groove-cutting mechanical recorder. He's heard everything!"

"And we thought we were safe, and didn't bother to speak Basic most of the time," mumbled Yuan. "He must be pretty damn sure of the situation. So now he's setting out to arrest all the psycotechs on Ganymede, and us along with them."

"What will happen to us?" wondered Falkenhorst. Sweat beaded his face, but the voice held an iron calm. "Will they dare take action against members of the Order?"

"Probably," said Lyell in a thin tone. "We're safer for him dead—we know too much. He may call Hall's bluff and execute us officially. More likely fake an accident." He scowled. "What to do?"

Kruse shrugged. His face was taut and pale, but he spoke with a sharp note of laughter.

"We've got three guns," he said. "We're used to higher gravity than this. We can catch those sons of Hounds outside by surprise. Pick up whatever equipment here you think we'll need. The only thing for us is to break out of here!"

There was only a moment's hesitation, as they weighed the meaning. Lyell nodded. "I hate to do it, but . . . Let's go."

He, Kruse, and Yuan, the best shots, took the weapons. The rest loaded equipment on their backs. Kruse flattened himself against the door and opened it just enough to peer out, into the faces of three Hounds.

"Boo," he said.

The nearest guard scowled and reached for his gun. Kruse snapped three shots.

"Come on!" he yelled, and flung the door wide.

The Engineers burst out into the corridor, stumbling over the bodies. Davenant stooped to pick up a gan for himself, and heard the whine of a bullet cleaving the air where he had stood. A corps of Hounds was trotting down toward them.

"Out of here!" roared Lyell.

They backed, laying down a curtain of fire. It seemed a miracle that there were no hits, but they were distant, moving targets. Davenant wasn't afraid now; he hadn't time to be. He burst around a corner, almost into the arms of another Jovian guard.

HIS fist leaped of itself, the blow shocked home and he saw the man lurch back with his face red. Coldly, Davenant kicked him in the belly and behind the ear as he went down.

Run! His breath was raw in his throat as he fled with the others, down an endless labyrinth, always down, toward the garages. He didn't see the action behind him as the three gunners turned to fire back. Once Falkenhorse staggered, grabbing at a shoulder which was suddenly wet. Davenant threw an arm around the man's waist, and they struggled on together.

Now—the garage entrance. In the confusion, it was unwatched. The Engineers went through, closing the massive door and dogging it behind them. A couple of mechanics ran up to protest. Kruse waved his gun.

"Back, or you get it in the guts!" he snarled.

There was a long row of sleek small rockets, ready and waiting. Lyell entered the nearest.

"Kruse, Davenant, Yamagata, aft to the engines," he clipped. "The rest stay with me. Be ready to take over piloting if I don't last."

"I hope those mechs stay buffaloed." Kruse's teeth flashed white. "We've used up all our ammunition, you know." His big form wriggled into the crowded

engine room.

"Where the devil will we go to?" asked Yamagata. "This boat isn't interplanetary."

"I don't know. The Outlaws in the hills, I reckon, if we can find them. What counts right now is getting clear of X."

The auxiliary motors purred, turning the rocket's wheels. It slipped down the corridor and up the airlock ramp. It was useful, having enemies indoctrinated out of all initiative. No one had thought to cut off the automatically opening valves.

As the boat emerged into dark bitterness, Lyell saw space-suited forms swarming across the ground.

"Not a chance to get to the *Light,*" he said. "Stand by to lift."

The rockets flared, tossing the boat skyward. Lyell headed north, switched on the autopilot, and began scrambling into one of the space suits. The rest did the same. None was a particularly good fit—a suit should really be individually built—but they would do.

Stars glittered in the forward viewports. Falkenhorst slumped with closed eyes, color drained from his face. Yuan studied the radarscope. His voice floated back to the thrumming hotness of the engine room, over the intercom:

"Someone coming after us."

"Yes, I see him now. Police rocket, and this thing hasn't a gun to its name." Lyell's voice held a groan.

Davenant did not see what happened. He felt the sudden shock and thunder, felt the hull reel around him and drop like a murdered seraph. Air whistled through the hole amidships, and the unbalance gyros howled.

"Hang on!" bellowed Kruse, slapping down his helmet. "Hang on and pray!"

They struck with a sundering crash which jerked Davenant's head almost off his neck. Darkness whirled before his eyes.

When he came out of it, Kruse was looking emptily through the engine-room door.

"They're gone," he said. "It killed them."

Slowly, Davenant crawled from the ruin. The boat had come down in a long glide, smashing itself into a land of bare mountains and reaching snowfields. The three men forward were dead.

Yamagata went out through the hole torn in the boat's waist and looked skyward. A distant red flare streaked south.

"They aren't landing," he said. "Be almost impossible to do in this country, and they'll be needed at home and won't figure on any survivors lasting long."

"Which we won't," Kruse answered dully.

"We can try!" Rebellion lifted in Davenant and brought his head erect. "We'll lay these men out as well as we can, and then—"

"Yes?" asked Kruse. "What then?"

"We start walking," said Davenant. . . .

That was how it had started. Now Davenant and Kruse stepped and glided, two dead men walking across the face of hell.

VIII

THE gauges said that about thirty minutes' oxygen remained. If it had not been for Yamagata, Davenant and Kruse would have suffocated already. They could stretch out their lives by sitting still, but there was no point to that.

A ragged edge of hills cut across the face of Jupiter like teeth of blackness. Their shadows streamed enormous before them, hard and sharp over the broken ground. Outside the shadows, there was a rush of light from the primary, chill amber which sparkled frostily off solid ammonia fields and flashed from the ice glaciers in another sawbacked range. When Jupiter was close to full, its radiance was enough for human color vision, though the hues had a dreamlike distortion,

Near the banded giant, no stars were visible, they were drowned out. When you looked away, you could see them over the sharply curving horizon. They glittered through the tenuous, unbreathable air with a cruel wintry brilliance.

Even carrying his own weight of suit, oxygen bottles, capacitors, and other

equipment, a man was light when gravity was less than a fifth of Earth's. You learned walking all over again, the first time you were on a low-gee world—a long, flat glide which ate the kilometers.

You learned to gauge distances when thin air made an object seem closer than it was, while a near horizon tried to make it seem farther. You learned to check every joint and valve and connection on your suit before venturing out, when the least failure could choke you, explode you, freeze you solid in minutes.

And you learned to have death for a companion!

The minds of the two surviving Engineers had grown so dim with the steady slogging that when the gunshot came it almost killed them. Davenport saw a spurt of snow and chipped ice before his feet and stared at it in a dull kind of wonder. He didn't hear anything except the whisper of wind past his helmet, for the air was too lean. Another slug pocked the low bluff to his right.

"Down!" yelled Kruse. "They're shooting at us!"

He nosedived for the ground, and a bullet whipped past the spot where he had stood. Davenant followed a movement of blind instinct. Ammonia-crystal snow feathered up to blind his faceplate, he pawed at it while his body tried to dig itself into rock.

Kruce touched helmets with him. "Radio silence, man! They may have a direction finder. We've got to speak by conduction. Now, this way—" He led an awkward belly-crawl toward the nearest of the little craters which scarred the valley floor.

Davenant shuddered. For a moment he was uncontrollably afraid, his muscles knotted immovably against the expected leaden blow. Then the very condition of hysteria triggered reactions which had been built into his mind during his long training. Suddenly he was without fear, his body keyed to a high adrenal pitch, his thoughts like cold lightning at night. He slipped after Kruse and wallowed down into the fluffy snow which filled the crater.

The Venusian hunched low, snarling into the empty sky. "If they pin us here for another half hour, we're done," he said.

A black outline showed above a ridge of ice, just for a second before ducking down again.

"Cincs?" asked Kruse. "Have they tracked us down after all?"

Davenant considered. "No. If that were a Cinc, we'd be dead by now. He'd have an infra-red 'scope on his rifle, and even with our heaters tuned down to where I'm glad I'm not a brass monkey, we'd show up like a bonfire against this temperature."

The big man blinked, a little surprised at Davenant's coolness. It would have surprised Davenant, too, if he had had time. He was fumbling with his pack, getting out the general unit which the discipline of years had made him carry from the wreck. General units were expensive, and Engineers were supposed to save money for the Order whenever it was humanly possible.

"Outlaws, then," said Kruse. "And how the devil we're going to convince them we're friendly?"

SLOWLY Davenant's thick-fingered gloves worked on the unit, plugging in jacks and turning dials. It ran off his own capacitors, and took its time about warming up in the Ganymedean chill.

He answered Kruse abstractedly. "We're not friendly with the Outlaw, you know. We're only trying to establish contact out of desperation, and—" A flicker appeared on the screen. "Here we go!"

A man in the field, who might have to work hundreds of kilometers from camp, couldn't pack twenty different meters and detectors. He needed a single device, rugged and portable, which could be adjusted to perform twenty different functions.

Davenant had simply connected the thermopile with the galvanometer, blinkered the lens to provide sharp directionality, and come up with an infra-red spotter. It wouldn't directly show men crouched behind rock and ice, but it

would show rising currents of air, heated by their suits. Cautiously, he swept it around the horizon.

"Two," he said after a minute. "One's sitting over in back of that ridge, the other circling behind us. I think he wants to get a vantage point from the top of that bluff and shoot down at us. Now, any ideas?"

"Mmmm—yeah. Let's get the circler. His friend won't be able to see what happens. We can get up on the bluff fast and wait for him."

A few minutes later, the Outlaw—he could be no other—crept over a final rise and toward a position where he could look down into the valley. A large form sprang on him from a crag, pinioning him. Another leaped at the same time from the nearly impenetrable shadow of a cave, grabbed the leads from his capacitors, and yanked them out before he could send a cry for help.

The man struggled wildly. It was hard for Kruse to hold him, here where weight counted for so little. Davenant got out his pliers and unscrewed the short aerial of the Outlaw's helmet radio. Only then did he plug the capacitors back into the suit circuit.

Kruse's helmet was tight against his prisoner's. "We don't want to cut off your juice permanently and freeze you," he said, "but we might have to unless you behave yourself . . . Get his gun, Hall."

Davenant could not hear that, but he had already picked up the weapon. To his surprise he saw that it wasn't a rifle, after all, but some kind of bolt-action smooth-bore, obviously home-made, though it used percussion caps. He covered the Outlaw until Kruse got some wire and bound the man's ankles together. Then the Venusian took the gun and stood up.

"I'm going after the other fellow," he said.

"Isn't that — dangerous?" objected Davenant.

"Of course, but look at your oxy gauge. We haven't got many minutes left, at the rate we've been using the stuff. And I've had stalking experience back home, which I doubt you have. See if you can talk this one over."

The tall figure slipped down the ridge and was lost to sight.

Davenant huddled beside the captive, touching helmets. He heard only hoarse breathing for awhile, and looked into a gaunt, hook-nosed face nearly hidden by long, tangled hair and beard. The suit, he noticed, was an old model, and bore signs of much handmade repair.

The Outlaw subsided a little. He could have thrown his arms around Davenant, but he could not have held the Engineer for long. He sat back with animal patience to wait for a better chance.

"Who are ye?" he asked. His English was barbarously accented, but clear enough. "Be ye gardam Cincs?"

"No. The Cincs were after us. We were looking for an Outlaw community where we can get help. We're men of the Planetary Engineers."

That conveyed nothing to the man, but he nodded grudgingly. "Ye're no Jovian, I see. Earth?"

"Only in a way. My Order exists apart from any planet. We work for all. But the Cincs hunted us down, anyway." Davenant paused, decided a half-truth was his best bet. "We want revenge on them. Perhaps your people can help."

"Mebbe new Cinc trick." It was a savage growl, with a lifetime's bitterness in the words.

"We want to be shown to your village. Let us talk to your chief or whoever—"

"No! Die first."

DAVENANT smiled nastily. "I don't see any signs of motor transport," he said, "so you must have walked from your home. You must have at least enough oxy to get back on. If necessary, we'll take your bottles for ourselves and follow your trail. But we'd rather let you guide us."

"Not enough oxy. We got caches, ye never find, ye die too."

"At least," said Davenant mildly, "we'll die trying." He was faintly surprised at his own ruthlessness. But the

Order came first. More persuasively he went on, "What harm can it do if you guide us? What could two men do against a whole village? We have news for your chief which will make him glad. You have nothing to lose."

The Outlaw lapsed into a sullen silence.

After awhile Kruse came back, prodding another man before him.

"I sneaked behind and got the drop on this'n," he explained. "Now what should we do?"

Davenant examined the weapon taken from the new captive. It was a sort of spring-steel crossbow shooting metal quarrels. In this gravity and air pressure, such a device would have plenty of range. It could easily pierce a suit of space armor and the man within it. The main drawback would be the low rate of fire.

His respect for the Outlaws went up another notch.

"First," he said, "we take these boys' spare oxy bottles for ourselves. My air's getting thick. Then we talk them into guiding us, or if they won't we leave them here."

It took some persuasion before an argreement was reached, but then the trek got started. Once the men tried to lead them astray, but Kruse, who had spotted the faint signs of their earlier passage, forced them back onto the true trail.

It was a long walk, and Davenant felt weak with hunger toward its end. He thrust the awareness out of his mind and whipped his flagging body into new energy. Once they stopped at a carefully disguised cairn and took out some fresh oxygen containers. There must be a lot of caches spotted throughout this country.

That would explain how the Outlaw patrols managed to range so far.

Davenant wondered with a certain chill what would happen when they reached the village. He had heard stories about these barbarians which, even allowing for exaggeration by their enemies, were not reassuring.

IX

NEAR the north pole of Ganymede, the Godwin Mountains rose steep and cragged, tormented black walls which shimmered darkly under the radiance of Jupiter. A monster system of glaciers capped them, spilling down gashed ravines and across the lower plateaus. The yellow light was cold on their slippery backs.

Kruse, Davenant, and their prisoners halted between two peaks which thrust above the ice and covered them with shadow. A slope fell away beneath them to a narrow, craterlike depression, and on it they could see the outlines of human figures.

"Let's go," muttered Kruse.

"No!" One of the captives spoke in a harsh whisper. "Services goin' on. Sentries 'd shoot us first, check later. We gotta wait."

Squinting against the chill unreal haze of Jupiter-light, Davenant saw that the people below were drawn up in ranks, facing a block of native stone where half a dozen worshipers were going through ritual gestures. Poking his helmet aerial forward and tuning up his radio, he caught, faintly, a deep-voiced chant:

God-home, god-home, hear our askin'.
See, we stand with sacrifice—

Shocked, he looked southward and up to the enormous face of the planet. It was at the full now, sprawling tremendously across heaven, the Red Spot like a single watching eye.

"Is *that* your god?" he breathed.

"God is in Jupe and Jupe is in God," answered the barbarian with a peculiar note of reverence in his voice.

O Zeus, could you know! Davenant imagined Olympian laughter ringing hoarsely through the mountains.

"They caught a man in the last raid on Y," said one of the prisoners. "Look!"

They could see a man struggling in the grip of four others. A tiny puff of freezing vapor came from him, he went

limp, and was hurled up on the altar stone. Davenant retched.

FORCING his mind back toward an impersonal clarity, he wondered about the development of Outlaw culture. How long ago had their revolt and exodus taken place—eight years? That didn't seem like time enough for this much degeneration.

But then, Ganymede wasn't Earth. The psycho-social effect of alien conditions had yet to be measured. Huddling, hiding, waging a doomed war for three or four generations, the hillmen would rapidly have forgotten their intricate, highly specialized civilization. The barrenness and cold of the landscape would have entered their souls.

He turned over what little he had learned about them in X. A religious colony forced to alter its ways of living and thinking in order to survive, forced yet further by prophet-dictators whose "revelations" had involved radical social change and increased their own power. Yes, it would be unstable, it would have its Old Believers.

The introduction of controlled mutation had led to mutiny and civil war, the dissenters had been defeated and fled into the wilderness. There they had hidden, skulked, and raided lonely settlements. Without books, without leisure, they would rapidly have become barbarians. The stories about cannibalism and human sacrifice seemed justified, but Davenport tried hard not to think of them as the monsters they were considered to be. They were human beings, lonely and desperate and driven close to madness, but they had the same potential as anyone else.

Besides, he thought, it was pretty obvious that the Cincs had been pulling their punches in the war. A concerted effort could have wiped out the hillmen long ago, but an external enemy was too useful.

"Seems to be breaking up down there," observed Kruse.

They waited till the scene was deserted, then moved cautiously down the slope and across the open ice. One of the Outlaws spoke with a note of glee.

"Might's well put down yer gun. Ye're covered now."

Sweat trickled along Davenant's ribs. He tried to look into the farther shadows, but they were too dense.

A voice in his earphones said, "Stand where ye be!"

A quarrel chipping the glacier near his feet added emphasis. They halted and stood waiting, their hands aloft.

Three men came into view, weapons leveled. "That ye, Gil? Fooled 'em here, eh? Good going!"

"We—" Davenant licked his lips. They felt sandy. "We came here on purpose. We're not Cincs or Hounds. We're from Earth, and we want to see your chief."

There was a skeptical silence. One of the new arrivals picked up the dropped gun and crossbow and touched the Engineer suits.

"Not Cinc make," he grunted. "But they're clever devils."

"All we want—"

"I know, I know. Shuddup. Ye'll get yer chance—mebbe."

As Davenant walked up the farther ridge, with guns at his back, he saw half a dozen figures appear with—brooms, by space! He felt a mental wobbling until he realized they were carefully smoothing out footprints and all other trace of the recent crowd around the altar.

There was no path. Slipping and stumbling, groping through blindness of shadow and dazzled by Jupiter's radiance, the party made a slow way through the crags. It seemed a long while before they were halted by other sentries. There was a low-voiced colloquy, and then the two Engineers were herded toward a cave mouth, a great gullet of blackness in an overhanging cliff. A machine-gun nest was dug in just beyond.

The passage fell rapidly downward, a reaching gloom where flash beams were pale fingers and echoes sounded hollowly even in this ghost of an atmosphere. Davenant could make out enough branch tunnels to wonder how anyone ever

found his way here. Like all small, rapidly cooling worlds, Ganymede was riddled with caves.

After another lengthy and silent walk, they found an airlock door. It seemed to be from a spaceship. There was another defensive emplacement before it, and another discussion with the guards. At last they were sent into the lock chamber. The pump was old and rickety, it took a long time to flush out Ganymede's air and replace it with a thin oxygen-rich mixture. Davenport's helmet frosted over and blinded him.

"Awright. Through here—stop—take off yer suit."

DAVENANT and Kruse stripped down to the form-fitting coverall which was standard underpadding. Kruse was dirty and tired, skin drawn tight across jutting bones, a thick stubble of red beard on his jaws.

I suppose I look just as bad, thought Davenant.

There were several Outlaws about them, gaunt, undersized men in worn coveralls. Some of them wore ornaments—hammered copper rings in nose or ears. All carried daggers which seemed to have been beaten out of native iron. They were more interested in the captured airsuits than in the prisoners.

"How about seeing your chief?" asked Kruse.

"Take yer time," muttered someone, and spat.

Kruse bristled. "Look here," he snapped, "I told you we were from Earth. In fact, we're Planetary Engineers. You probably don't know what that means, but believe me, it's important. We have word for your chief which he'll be glad to hear, but if you don't treat us right the Order has means to make you do it."

That seemed to impress them a little. One of them traced a grimy finger over the suit, apparently impervious to the chill which was still on its exterior.

"Not Ganny make," he said. "Mebbe they be really from Earth." He spoke as a man at home might have spoken of Avalon.

"No weapons," said one of the two whom the Engineers had taken.

"Of course not," Davenant said loftily. "I tell you, we belong to the Order. Do you think we need to lug hand guns around?"

"Well—" A hillman scratched his tangled whiskers. "All right. Come along."

Two others fell in behind, with cocked crossbows. The rest trailed after, their eyes lit by a dull curiosity.

THE caves and tunnels here had been little improved save that fluoros were strung to illuminate them. Davenant decided that a section of the caverns must simply have been blocked off, with airlocks installed here and there, heated, and ventilated. No system of tubes for that—there must be only a few power fans mounted near the oxygen renewal plant. The air felt dank and stagnant.

The populated section was a series of narrow tunnels in which shallow caves had been chipped or blasted. Ragged curtains served for doors. When one or two of these were drawn aside as someone came out, Davenant saw a pathetic bareness within, a few boxes or stones for furniture. The dwarfish, near-naked women and children who swarmed and chattered around the convoy seemed unnecessarily dirty. Behold the noble savage!

"Can't be more than a few thousand," muttered Kruse. "Is this all the Outlaws there are?"

"I suppose so," answered Davenant. "I heard in X that there were several such villages once, but that only one was believed still to survive. If the Cincs didn't get them, something went wrong with the air plant or the power or—"

His revulsion was becoming an enormous pity. They couldn't even surrender, these poor starveling troglodytes; X had no use for them except as a unifying, ineffectual enemy.

Further along, they passed a communal kitchen. Steam pipes from the nuclear plant had been laid to heat food which seemed to be mostly synthetics.

The passage debouched on a wide

cavern at whose farther end was a real door, native iron. A clumsy idol of black stone loomed before it, and two men armed with modern rifles—presumably stolen—lounged nearby on guard. There was a jabbering conference, and one of the sentries ducked inside.

Kruse switched to Basic to speak to Davenant. "Have you any idea what we're going to tell the grand high panjandrum?" he asked.

"Depends on what he's like," said Davenant. "It had better be good, though, or we'll end up in a stewpot."

The guardsman reappeared. "In," he grunted. As several pressed behind offering to cover the prisoners, he ordered, "No, just them two."

When the door clashed shut, Davenant had to struggle to suppress his astonishment. The chief seemed to own a suite, several rooms formed by plastiboard partitions. There were carpets on the floors, chairs and tables, a shelf of books. The man who stood before them was tall for an Outlaw, his long gray-shot hair and beard was neatly combed, his coverall faded but clean. Three women, presumably wives, scuttled out of sight.

There was a silence. "From Earth?" asked the Outlaw ruler at last.

"Yes." Davenant moved forward.

A pistol leaped into the man's hand. "Easy," he warned.

"We don't intend violence," said Davenant. "We jumped your scouts because they attacked us, but spared their lives. All we're after is a chance to talk to you."

"Awright. I'm Roberts-John, boss o' Jupiter City. Come in an' siddown."

The chief led the way to a sort of living room, found himself a chair, and clapped his hands. One of the women brought in a tray of water and synth-dough.

It was a shaking effort to nibble sedately at the food instead of wolfing it. The chief asked the Engineers their names and went on to some shrewd questions about the inner planets. Then he came to the point:

"Why're ye here?"

"There was—trouble with the Cincs," said Davenant. He was faintly surprised that he should take the lead, but Kruse was sitting back and saying nothing, eyes half shut with weariness. "We have to get in touch with the Abbey—with our Order, the Engineers. So we came looking for your people to help us."

"Lucky chance for ye," said Roberts-John. "Ye'd never 'a found the city 'thout our men to guide. It's well hid."

DAVENANT drew him out on that subject. He learned that the original mutineers had fled in some of the smaller spaceships, after wrecking others which might have been used for pursuit. The old *American* had long ago been broken up to help build X.

Now and then the Outlaw outposts had had to fight the Hounds of the Lord—the warrior corps which had since been recruited from exogenes—who had come in ground vehicles. But the confusion left after the mutiny, and the damage done by it, had given time enough to establish this village and hide it well. The nuclear power plant of the spaceship in which this colony's founder had arrived had been moved underground—compact and shielded as it had been, that had meant a heart-breaking job—to furnish energy. Likewise her chemical air renewer had been removed. Indeed, most of the vessel had been utilized. A food-synthesis unit had been taken along as well as other equipment.

Ice had been mined, some of it electrolyzed for oxygen. In general, the builders of Jupiter City had repeated the pattern which had made X, although on a smaller scale and under immensely greater difficulties. Raids had later furnished more materials, fuel for the atomic engine, tools, fabrics, weapons, supplemental food.

This place radiated heat, but not enough to be detectable through the overlying rocks and glaciers. It contained plenty of metal, but scattered iron deposits confused magnetic locators. As for visible surface traces—Ganymede was large, and the Godwin country some of the wildest and most rugged on the satellite.

Davenant could fill in a good deal of history for himself. He had read how the first generation here had been skilled engineers, but because of the shortage of books, the impossibility of proper instruction, most of their knowledge had died with them. Hereditary monarchy had been inevitable—one family supported by the rest, with leisure to learn, by rote, the operation and servicing of the machinery on which life depended, with an intelligence sharpened enough to make basic decisions. The rest merely obeyed orders and spent their lives in a dullness relieved only by work, fighting, and the orgies which followed victory.

They had their religion—which had been corrupted into sheer paganism—their taboos, a few songs and stories, their dimming traditions. Otherwise there was nothng.

"I'd like to see your power plant," said Davenant. "That sort of thing was my special job at home. Without expert care, it will sooner or later fail." A bribe.

Roberts-John seemed to know it was. "What d'ye want of us?" he demanded again. "S'posin' we 'greed t' help ye, what c'd we *do?*"

"That," said Davenant bleakly, "is what I am wondering."

X

KRUSE spoke up then, and told of all that had been happening to the survey party of Engineers. Roberts-John nodded, saying little. How much of it he really understood was a question.

Davenant felt a stinging in his eyes. Lyell, Falkenhorst, Yuan, Yamagata, they had all been so close and dear to him, and now they lay dead in the snow. They sprawled frozen on the face of the moon, their burst eyes gaping sightlessly at Jupiter and the great wheel of stars. Their bodies were blocks of ice, their brains held only a hollow and everlasting darkness. Farewell, my brothers!

Davenant shoved such thought away. Time later to mourn. He was still alive, and he had a mission. He had eaten and drunk in this oddly civilized home of a barbarian king, and now he had to start planning.

"Ye can jine with us," suggested Roberts-John. "We can always use a tech. Mebbe when your friends come from Earth, ye can get in touch with 'em."

Kruse rubbed his chin. "How about that, Hall? I can't say I fancy turning cave dweller for the next one to five years, but it may be the only way."

Davenant shook his head. It did not occur to him that he had taken the leadership. But there it was again.

"Not good enough," he said. "The Cincs may destroy this nest at any time, or they may decide to abandon the terraforming idea, which presumably originated with the Psychotechs. In which case we'll never get off this moon. It's more than us, Torvald, though God knows I don't want to play hero. The Abbey has to be told. How can the Abbey plan if it doesn't have the facts?"

Kruse gave him a sour grin. "All right, then. What do you plan on doing?"

"Let's first take a look at your power plant here, Chief Roberts," suggested Davenant. "I'm not sure I like those occasional flickers in the lighting."

Kruse showed a moment's surprise. He knew as well as the younger Engineer that the cause was nothing worse than a faulty turbogenerator. Clamping expressionlessness onto his face, he nodded and rose.

"I think Hall may be right," he said noncommittally.

Roberts-John looked alarmed, and led the way out and through a descending series of tunnels. Davenant's general unit, adjusted to Geiger registry, showed more radiation than there ought to be, though not enough for real worry. Faulty shielding.

He traced that quickly. Some of the lead blocks in front of the reactor had slipped, perhaps in one of the frequent moonquakes caused by the tidal pull of Jupiter. Otherwise the power plant was in fairly good shape. It had been well

constructed, and had been tended with care.

He shook his head dolefully and glanced at the row of meters, remote-control dials, and instruments. "Do you know what these are for?" he asked the Outlaw ruler.

"Some of 'em. When this here needle gets near th' red line, I pull out that there rod, an'—" The chief went on to reveal a scanty, barely adequate empirical knowledge of maintenance.

"I thought so." Davenant pointed to a gauge whose indicator was well past the red. It showed merely that the original slugs were sufficiently enriched with new isotopes to be worth removing and replacing. "How long has this been that way?"

"Long's I c'n remember. Ye don't think—"

"I do. The hypewangle isn't dreel-sprailing with the camits. Lucky for you that the effect builds up slowly, but I wouldn't give this thing another five years of life unless something's done. Look!" Davenant tapped a few buttons, emergency manual cutoff. Needles wobbled across the dials and the lights went out. The chief roared and sprang for him. Kruse held the frantic man back until Davenant had restored functioning.

"Don't *do* that!" Sweat drained from Roberts-John's face and he shook uncontrollably. "Don't do it!"

"I was only testing the hypostat," Davenant said mildly. "It doesn't fantangle as it should. Unless you let me make some badly needed repairs, you'll be frozen to death in a few years."

"I—I—I—" Roberts-John gulped. Mastering himself, he asked with a savage bark, "How d' I know ye're not a Cinc sent t' wreck th' whole town?"

"I'll be here, too," Davenant pointed out. "Give me a few days and I'll have this thing purring. . . ."

By the end of that time, though, Hull Davenant was close to being the absolute ruler of Jupiter City. The man who straightened out the reactor, fixed the electric generator running off it, and cannibalized a dozen dead helmet radios to produce half as many operating ones, inevitably would be.

Roberts-John was too proud to be obsequious, but too intelligent to resent a better man for the job than he was himself. Behind his mane and beard was a clever, queerly altruistic personality. Davenant found it rather embarrassing to turn down his offer of temporary wives. It wasn't morals so much as appearance and cleanliness. Kruse was not fastidious.

The Venusian regarded him out of a grease-smudged face and said in the Basic they used here between themselves, "Nice going. But now what?"

"Now," said Davenant thoughtfully, "we'd better find a way to reach the *Starshine.*"

"Huh?"

"Of course. Unless you have some scheme for recapturing the *Light* or grabbing X's one deep-space cruiser, the only craft in the Jovian System capable of reaching Luna. The Psychotechs didn't have a chance to escape with her . . . How badly wrecked is that rocket we fled in?"

Kruse closed his eyes and summoned up eidetic memory. "Maybe it could be repaired," he said at last. "I don't think anything is too badly damaged. Of course, you're assuming the Jovians haven't salvaged it yet . . . No. I see it now. The boat runs off chemical fuel and isn't designed to get far from the surface. Even in perfect shape, it couldn't get up to the *Starshine's* orbit. Thrust's too low by a factor of—um, I'd say between one and a half and two."

DAVENANT slapped the shielding of the town's reactor. "This baby once ran a pretty good-sized spaceship. Lots of energy there."

"And I can just see our hosts letting us take it."

"Not at all. I was thinking of a power-beam."

"Huh? Nobody's ever run a rocket off a power-beam!"

"There's always a first time. Let me think, now . . . How's this sound? When

you get out there with your salvage party, scrap the whole drive system and replace it with a king-sized tank for water, a power-beam receiver, and an electrical hookup. The idea will be to boil water around superheated coils, blow it out the rear past an ionizing arc, and use a linac system to accelerate the ions still further. Essentially a crude version of the present-day space drive. The whole thing will run off a beam from here. Naturally, you'll have to give the boat a feed-back signal to keep the beam aimed right."

"That," said Kruse, "would make good continuity for some stereo serial, but you know as well as I do that it calls not only for construction from the ground up but for design—and we haven't much more than a slide rule in this place. I'm not Chief Scientist Young of the Junior Intergalactic Patrol."

"You are an Engineer," Davenant said quietly.

They got to work.

The job was not quite as fantastic as it sounded. They were aiming only to get off a small world with negligible air resistance, and not even to leave its gravity well entirely. The principles involved were familiar to both, the basic design standard in such midget craft as the asteroid scooter.

There was a good deal of machinery from the Outlaws' original spaceship, stored away for ultimate use as scrap. The colony had no projects calling for multi-element vacuum tubes, astrogating robopilots, high-voltage arcs, or a hundred other parts.

Davenant's idea was easy to draw up, even to make some elementary calculations about. More than that, a Planetary Engineer had training for his profession such as had never been seen before. He didn't have to stew for weeks before seeing the answer to a problem.

His subconscious mind collaborated all the time.

In about two revolutions of Ganymede, the plans were ready. And the parts and tools which would be required were loaded up.

The main difficulty was testing. There just wouldn't be any way to get all the bugs out.

Whoever piloted that boat would have to hope it stayed in one piece for the few hours needed!

KRUSE took out a gang of men, dragging sleds piled high with equipment and supplies. Davenant stayed behind to supervice the construction of a power-beamer.

When he told Roberts-John what he wanted, the chief exploded.

"No!" he cried with horror.

"But—"

"No! 'Twas bad enough taking so much of our stuff for fixing that boat."

Davenant had had to promise all sorts of benefits which the Order would supply in exchange. But Roberts-John still shook his head.

"We can't spare the men neither, not really," he said. "Somebody's got to watch the passes leading here." He tugged at his beard. "Now ye want to stick up a mast that'll yell to the Cincs where we are. "Uh-*uh!*"

One bony hand fell to the gun at his waist.

Davenant braced himself. There was death here unless he could talk over the chief . . . Talk the whole Outlaw population over, in fact.

"It would be removed as soon as it had been used," he countered.

"S'pose a Cinc boat happens over before, huh?"

The Engineer took a deep breath. He'd rather expected this reaction. Now it was time to play his one lonely ace, and play it with a flourish.

"You've seen what I can do with what little you have here," he declared slowly. "That's a big ship we're aiming for, crammed with equipment." He was gambling that she had not been gutted, but the notion that the Psychotechs had kept her for emergency use argued that her holds were still pretty full. "How would you like it if we ended the Cinc menace? We could do it, you know."

Roberts-John goggled at him. It took a long time for Davenport to put the

idea across. . . .

The beaming mast grew swiftly. It need only be a skeleton of spare girders welded together according to plans the Outlaw mechanics—after all, they were capable of maintaining something as intricate as an airsuit—could easily follow. The casting and controlling units took more work. Davenant almost forgot what sleep was like. He knew exactly how to build a rig sufficient for his purposes, but improvising the different parts and assembling them was a nightmarish task.

THE caverns were in one white flame of excitement. They had known they were doomed, these people, had known their long struggle was hollow. The sudden prospect of an end to it made them all a little crazy.

Davenant dared not tell them what a fragile chain their newborn hopes depended from.

Kruse returned in two revolutions. "She's ready, as far as I can tell," he said. "It was mostly the bows that were wrecked—not too much repair to do actually. Rebuilding the motor was the tough part. Think coils made with a tolerance of fifty millimeters are going to work? They tested better than I'd expected, but—

"Of course, I'll have to pilot in a space-suit. We didn't stop to seal the cabin and put in air units, but if she hangs together at all it ought to be possible to ride her."

"I'll pilot," said Davenant. "I know more about electronic systems than you do."

"Mmmm—you're risking your neck on a mighty thin chance. Toss you for it."

" 'They also serve who only stand and wait,' Torvald. Roberts-John is determined to keep one of us a hostage. It won't be pleasant for that one if this fails."

Kruse grimaced. "All right. You're the pilot. You're younger anyway, faster reactions, and this boat is going to need a lot of human handling to make up for its own deficiencies. . . ."

XI

SPACE was a great frosty darkness strewn with a million cold suns. The enormous crescent of Jupiter blotted the Milky Way, as if drinking a stream of stars. The sun was far and small and heartlessly brilliant.

Davenant's gauntleted hands were numb on the controls. Blastoff had been automatic. No space vessel can be flown by a merely living creature and arrive where it wants to go. His part had been only to aim her nose in the precalculated direction, punch the firing button at the right time, and hold it down the proper number of minutes. When the abused gyros began to hunt, he had had to compensate with his free hand on the manual control wheel. That was all, but it was nearly enough to break him.

Now the jets were dead and he was falling upward, seeking an invisible object whose orbit had been computed roughly from eidetic memories of incomplete observation. If the calculations were too rough, he would eventually spatter himself over the cratered face of Ganymede. The rickety craft would not let him come down alive.

If he got outside the cone which his power-beam could reach, he would be helpless. He hadn't far to go—less than a thousand kilometers from the surface, a couple of hours' jaunt in an airboat on Earth—but space was cold and quiet and very large.

He waited. He thought of many things, in a dreamlike part of his mind remote from that which watched the radarscope. He was aware of being chilled and cramped, hungry and thirsty, dull with fatigue and strain, but it all seemed far away somehow.

There! A pip, just sticking over the noise-level! It grew as he stared, off to one side. He was going to pass it at an estimated hundred and fifty kilometers. He switched power back on, fought the wobbling gyros as they brough the boat's nose around. He had to aim, not where the ship was now, but where it was going to be when he got there. His only in-

struments were the radar, the clock, his eyes, and the mathematics drilled like reflexes into his brain.

Fire!

The ship was visible, a tiny splinter against heaven. Another computation. He'd pass it by some twenty kilometers, going much too fast—vector in this direction—fire, and hope his estimate hadn't become obsolete in the time needed to make it.

Fire!

Turn eighteen degrees.

Fire!

He passed within a kilometer, relative velocity something like fifty KPH. No use trying to maneuver this cranky wreck any closer. He gauged speeds and distances, thankful that he'd done free-fall work before, unbuckled himself, and stepped to one of the holes which gaped raggedly in the cabin. Then he jumped.

He didn't quite make it. Almost, he spun past in a long orbit which would have frozen him to death before it smashed him against the satellite. But he was carrying an extra oxy bottle for that emergency. Its jet wasn't much as a reaction gun, but he rode it back to the *Starshine* thinking hysterically about witches on broomsticks. When his magnetic boot soles clamped to the great hull, he swayed for a long time in a faint.

Recovering, he looked around through blurred eyes. Ganymede's grim pock-marked face bulked tremendously over the edge of the ship, seeming to dwarf even Jupiter. Shuddering, he groped cautiously in search of an entrance.

The airlock cycled for him. Good ship! He patted the metal with a lunatic giggle. They built those long-range fellows to last. They had to, with years spent on some of the outer-planet expeditions.

It was utterly cold and dark inside. He floated through many levels, his flash beam a wan puddle of radiance in the smothering black, to find the engines. Still running, still running, at minimum output.

Good! Good! He turned them up, and air and light and warmth began slowly filling the empty hulk. When it was safe to take off his space-suit, he looped himself to the nearest stanchion and slept the clock around in complete exhaustion.

WHEN at last he awoke he inspected his prize. The food synthesizers were still in working order, but needed recharging with chemicals which were in the storerooms. He didn't bother, contenting himself with opening some plastis and gorging.

Fighting the sleepiness that followed, he searched for lifeboats. Yes, there were four, sweet little craft though somewhat obsolete. There was a complete laboratory for all phases of planetographic work, a machine shop, an electric shop, a wealth of spare parts. Davenant felt like wallowing in that splendor of tubes, wires, optically perfect reflectors.

No, no! Down, boy. You've got work to do.

First, a lifeboat to fetch Kruse and some Outlaw assistants. It was a temptation to get just the Engineer, for the two of them could take this ship home. But Roberts-John was no fool. He'd hold them to their bargain at gun point if necessary.

So—

How did you go about conquering X with an army which the Hounds could annihilate in half an hour?

It would have to be bluff, Davenant decided. With the help of the lifeboats, the Outlaws could move unsuspected almost to the gates of X, ready to take over if its garrison could be made to lay down their arms. To do this, he would have to—yes, build a damper-field generator. Against it, the Jovians would have no defense, for they didn't realize its limitations. When the lights went out and the air began to grow cold and stagnant, they should be ready to talk business.

If they didn't capitulate?

Davenant shrugged. One worry at a time, please. . . .

XII

THEY must be mad with fear down in X. Davenant's thought of them rioting in the dark was gruesome, but he forced it out of his mind. He sat now in a lifeboat, hunched beside the radio. From time to time the autopilot fired jets to bring the craft back as its orbit took it out of communication range. He had contacted the Jovians and they had sent for Halleck as ordered; now came the tough part.

"Hello, up there! Who're y'all? This's Cinc-1. Whatcha want?" Halleck's voice was vague and distorted, for the Jovians had only their capacitors now to furnish power, but Davenant could hear the rawness of terror in it. "What've y' done?"

"This is the Order of Planetary Engineers," said Davenant. "You were warned not to molest our men, and instead you murdered them. We've come to settle that account."

"I—I— No! 'S a lie! Accident—"

"Shut up. One of our spaceships has a damper field beamed on your city. As long as we keep it going, your power plants won't operate, and you'll die when your capacitors give out."

That was not true. There was no way to beam a damper field, nor did it have much range. In point of fact, Kruse and an Outlaw gang had moved a boat with an improvised field generator nearly to the walls of X. But Davenant had acquired a fast education in diplomacy.

"That's the least of what we can do, so you'd better accept our terms without arguing."

"What y'—want?"

"Are any of those psychotechs you captured alive? . . . Good! Fetch me Angel Garson. Fast!"

"But—"

"For your information, Angel Garson has just been made the temporary Cinc-1 of Ganymede, so treat him with respect. I'll talk to him as soon as he's available. Jump to it!"

Davenant couldn't help feeling a little ridiculous. He was being so completely out of character. Not that he didn't have other weapons, but he hated the thought of bombing the city.

Another voice reached him.

"Hall? That you up there? My God, man—"

"How'd they treat you?"

"Oh, I'm still alive. Drugs got my information out of me. They didn't have to use torture, and we were being kept as labor for a proposed penal colony. But how in all the hells—"

DAVENANT said in Basic, "Look, Garson. I'm speaking for the Engineers now. Somebody has to dictate terms to you wolves, and I guess we're elected. Do you think that given an allied military force, you could maintain a fresh government in X for a few months?"

"Y-y-yes." The Angel's swift poise was a measure of the man. Davenant felt humbled, had no relish for playing conqueror. Garson went on, "Knowing what'll happen if they don't obey your orders, I'm pretty sure the people will cooperate. I can institute a propaganda campaign, *if* I like your ideas."

"All right. Here's what I want." Davenant forced himself to snap it out. "Cincs and Hounds will be disarmed, but no revenge taken on them unless they break the new law. We can't afford to make them desperate. Outlaws will enter X and have police and administrative powers. Your psychotechs can advise them, but their chief has the final word. I'm giving him strict orders to maintain the status quo till we send a real task force from Luna. So none of your tricks —because all the psychodynamic equations in the universe won't stop a damper field or a lithium shell.

"As soon as possible, an Engineer delegation will get to you and reorganize on a more permanent basis. What I anticipate is a fairly open society—as nearly as can be with these poor distorted people—working toward eventual human normalcy. The interim government will be a mixed commission of En-

gineers and Jovians. A strict constitution will be written, and the Order will stand guard for a long time to let the new political habits take root.

"Meanwhile, terraforming will go on, the Order to be paid for that as well as for its administrative services. Once you've got a livable world, I don't think this type of occupation statute will be needed any more, but that's quite a ways in the future.

"I know your Institute group has its own plans; whether good or bad, I can't say. But you're only human and not to be trusted with absolute power. Some day, when this system is well built up, you might decide to fight a war of conquest with Earth, and not even the Engineers can stand by and do nothing while that possibility exists.

"You'll be free to educate and propagandize openly, like everyone else. But the commission is going to be alert for any cabals, so don't figure on taking over from within again. That sound agreeable to you?"

"I"—Garson laughed shakily—"I suppose it has to. . . ."

There was some time required to get things established. Under the threat of the damper field, the Sergeants were cooperative enough, though rather bewildered. Davenant was well aware the Psychotechs knew he was bluffing about an Engineer fleet out in space, but since their own lives would not be safe until the Outlaws had marched in to garrison X, Garson's men had no choice but to work with him. After that, it would be too late for Cincs and Hounds and Institute people alike.

Considering what a long score they had to settle, the barbarians were remarkably well-behaved. Nevertheless, a few incidents made Davenant feel ill. But had he had any alternative?

Kruse voiced the real fear when the two were again alone, driving the *Light* back toward Luna.

"Do you think the Abbey will agree to all this?" he asked. "We've made an awful lot of commitments for them."

"I don't think they can do anything but follow out my promises, at least in a general way," said Davenant. "It's not only a matter of prestige and the ultimate safety of all mankind, but . . . How else are they going to get that terraforming contract?"

"And we've plunged the Order into politics to its ears," said Kruse.

"How much choice had we?"

"Damn little, I reckon. Still, it's interesting to speculate whether we'll be flayed alive or merely boiled in oil."

"Most likely cashiered," said Davenant.

He felt heartsick at the thought. For him, there was no other life.

His moody eyes searched the infinite heaven, looking for Earth.

EPILOGUE

THE Coordinator of the Order of Planetary Engineers was old, but the eyes in his seamed face were still brilliant and he spoke with a young man's resonance. As he sat behind the great desk, a window in the tower framed his white hair with stars.

"Send him in," he ordered.

"Yes, sir."

The guard, unarmed but husky, went out, to come back with the prisoner. A nod from the chief dismissed him. There was a long silence.

"So," said the Coordinator at last, "you've been playing politics, have you?"

The prisoner bit his lip. "You have my report, sir," he answered.

"And you've presumably had instruction in the rules."

"Sir, there are historical precedents—"

"The Council and myself are empowered to draw conclusions from them," said the Coordinator frostily. "Not a wet-eared tech. Besides all the excuses in your report, have you anything to say for yourself?"

Bitterness lashed back. "Sir, it was a matter of saving lives. Also, if I hadn't done what I did, we wouldn't have the contract now. The rules also say some-

thing about men in the field exercising independent judgment, don't they? A job is more than a problem in machinery and natural resources. People are involved, too, and they're the only reason the work is being done at all."

"Somewhat emotional," murmured the Coordinator, "but not without a certain spirit." He ruffled the papers before him. "I've been looking at your psych record. Promising. You can be trusted with further education."

"Sir?"

"Rules are crutches, son." The Coordinator leaned back in his chair. "Go on, sit down. I won't bite you. Not very hard, anyway. As I was saying, rules are valuable for people whose power of really efficient independent thought is limited to the mechanics of their profession. We've got to have regulations. But they don't cover every possible case, and the man who can break them when necessary and get his assignment finished because of that violation, is a man we need.

"You did a hell of a good job out there. Officially, now, you're going to be sent in disgrace to Venus to do some low-grade manual labor. That sentence is for three years. Pretty stiff, eh? But actually, son, you're going to school—a little school we've got hidden away for future members of the Council."

"I—I—"

"Don't try to talk," said the Coordinator. "Right now, it makes you look too much like a fish. Son, the present system has been in effect for a long time. The founders knew that the Order had to preserve the appearance of staying out of politics, of being above all local quarrels, if it was to accomplish its mission. They also knew that it would not always be possible to remain aloof. As you just said, jobs also involve people. So from time to time we've stepped in, as quietly and with as great a show of reluctance as possible. The rules keep us from getting too deeply committed to local, temporary affairs. The rule-breakers keep us operating.

"If your own violation had been botched, you *would* be on your way to a labor camp—unless you preferred a dishonorable discharge. As it is . . . Well, after a decent interval you'll be skippering a crew of your own, and later you'll be elected to the Council. Maybe you're going to end up behind this desk. We'll see."

He grinned. "All right, consider yourself properly dressed down, and put on a hangdog look. You'll be on your way tonight. Good luck!"

They clasped hands. The prisoner wheeled and stepped smartly to the door. It opened for him and he was gone.

Coordinator Hall Davenant sighed, an old man's envious sigh. Memory ran back over a waste of years, to a night when he had walked across the snows of Ganymede. It had not even been a dream, then, that he would sit behind this desk, but if it had occurred to him he would hardly have been able to wait.

And now he had it, his highest ambition lay in his hands for him to do with as he would. But men were walking across the snows of Pluto while he sat here.

Some day the Solar System wouldn't be big enough for them.

Briefly, he looked out to the cold challenge of the stars. Then he returned to his work.

FEATURED NEXT ISSUE

TOO LATE FOR ETERNITY

A Brilliant Novel of the Future

By BRYCE WALTON

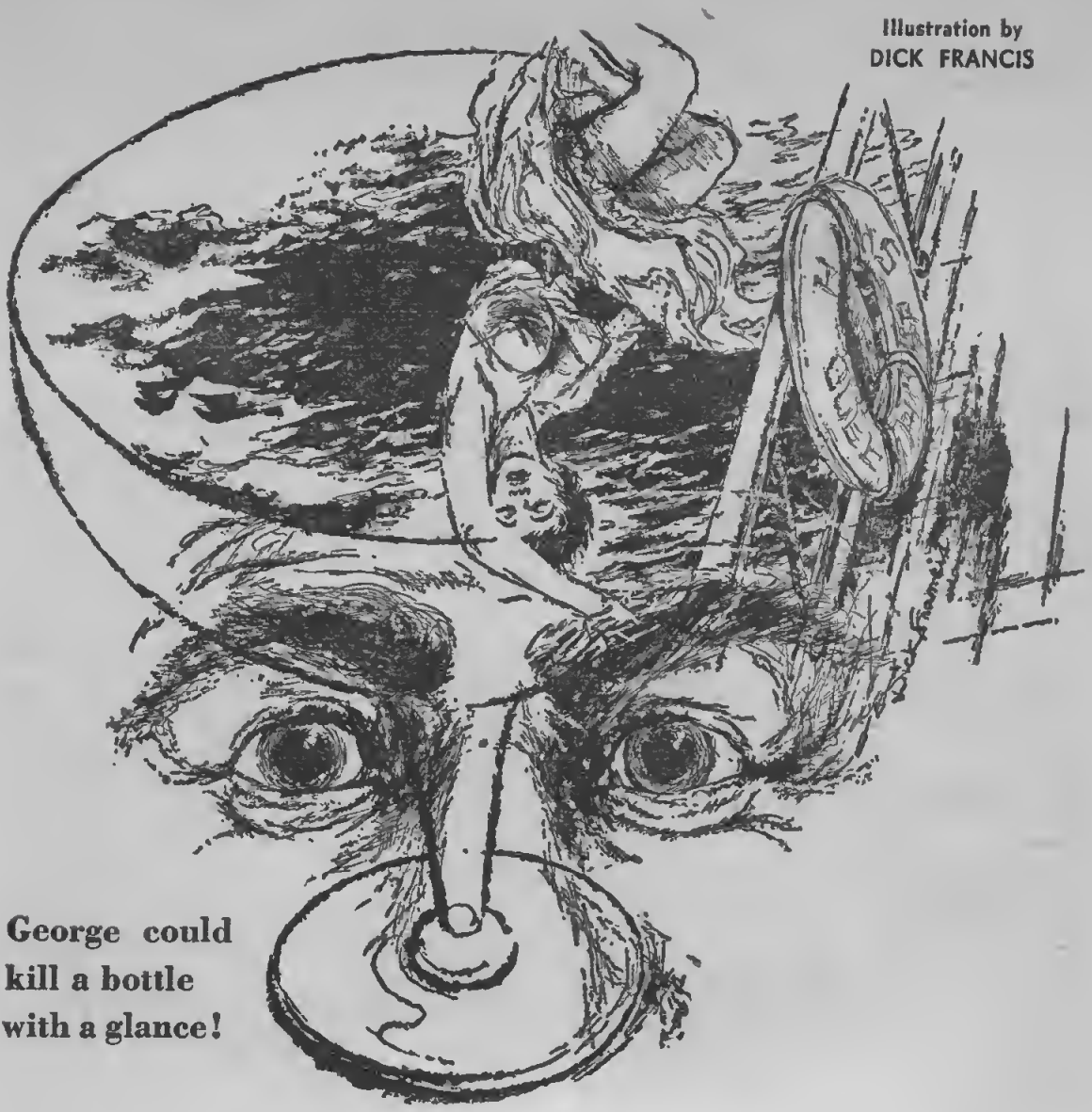


Illustration by
DICK FRANCIS

George could kill a bottle with a glance!

Only With Thine Eyes

By WINSTON MARKS

I TAKE my daily double—two ounces of sour-mash bourbon—at Mike's Bar down on Washington, because you meet all types there. And I mean all types.

Take this George character. You could hardly call him a type, because I doubt you'll ever find another like him, I sincerely hope.

He is big and broad and curly-blond, and he walks in heavily on his heels. Right away, little Mike drops his bar rag and comes up with an autographed hard-ball bat.

In spite of his mixed clientele, Mike maintains order at any cost, and I can see that he is willing to risk wiping a few autographs off his trophy stick on this blond boy's skull if necessary.

Blond boy sits down on a stool, just the same, leaving one space between him and me. Mike gives the bat a little wiggle and says, "George, how are you?"

George ignores him, swinging his handsome, shaggy head from left to right, looking at the half-dozen shank-of-the-afternoon customers, including me.

Too curious for my own health, I inquire of Mike, "What's the occasion?"

Mike studies the big boy another second or two and lets the bat droop. "This is George, the bar-buster," he says. "He is known as a crusader against drink and sex and gambling and, well, you know, things that are fun, but especially drinking."

My question has collected not only an interesting answer, but also the attention of this George person, who is half-turned and staring down at my untouched noggin of sour-mash. I cup my hand around it protectively, since it is my total daily ration, and I am not only a temperate drinker, but also I am most belligerent about my temperance. Nor am I about to hold still for any nasty abuse over it.

I feel fairly secure in my determination, what with Mike's ball-bat backing me up, plus the fact that I juggle steel for a living, and those lumps on my shoulders are not from eating rich food.

So I decide to needle him. "Buy you a drink, pal?" I say. He raises his head for the first time and glares at me with a pair of eyes that grind into me like two jets from a sand-blaster. I mean they are really fanatical. They are wide open with an acre of dead white surrounding each black iris which is barely rimmed with blue. It is dark in Mike's, but those irises are dilated like a hop-head's.

I get a charge out of reading this popular psychology stuff. It gives me sort of a morbid appetite for details about what makes peculiar people tick. George is one peculiar apple, and before I think twice I blurt out, "What gets into people like you, mister? Why do you think you got a license to go staring bug-eyed at decent people having a snort or two?"

Now, mind you, when I ask this nosy question I have not yet tasted my drink, nor during the following recitation do I so much as glance down at it.

My question hits this George in the face like something wet and cold. He screws up his forehead for a long minute, and when it unravels he has a thoughtful look. Slowly he shifts over to the stool next to me, drops his eyes to my drink and starts talking like he was reading it all off the surface of my straight shot.

He says in a low, husky voice, "Sure I'll tell you. I hate alcohol. And I enjoy hating alcohol like you enjoy drinking it."

"Tell me about it," I say. And he does:

I HAVE hated alcohol since commencement day, five years ago. My mother is dead. Drank herself to death. But my dad was there to see me get my B.A. degree. He was there and he was drunk.

He fell asleep during the program, and when they called my name it woke him up. He got confused and thought he was attending some sort of alumnus affair. He saw me up on the stage and stood up and shouted, "Good old George. Three cheers for my son, good old George!"

It got so quiet in the auditorium you could hear my diploma hit the floor of the stage when poor old Dr. Mathews dropped it. Somebody in the audience snickered, and when Dr. Mathews and I knocked heads bending over to get it, a few others began laughing.

This gave Dad all the encouragement he needed. He yelled, "When you guys get through ducking for apples up there, let's get this party rolling."

Give a lot of bored people a good shocking embarrassment and they'll usually laugh it off. That's what happened. The whole auditorium broke into hysterics—even the board of regents and the faculty. They could afford to. Dad had endowed the school with more than

a million dollars during my attendance there.

This was nothing new or funny to me. It was just the final mortification after a hundred incidents leading up to this moment, and the memory of Dad's love and all the indulgence that seventeen oil wells could buy for me vanished in this supreme humiliation.

Dad wasn't particularly repentant when he realized what had happened. He dragged me off to the biggest hotel in town where he had made arrangements for a whing-ding party for the whole graduating class.

It was a fiasco. The college officials and instructors came, because they had to. But only one member of my class showed up. That was Helen.

I loved her. I worshipped and adored her. She was the only reason I had stayed in college four years. There was only one thing wrong with her. She was weak, weak the same way Mother and Dad were weak. She was weak and forgiving, even to the extent of overlooking Dad's outrageous behavior at our graduation exercise.

When she came into the grand ballroom where Dad was holding forth with the champagne, I grabbed her hand and towed her upstair's to Dad's suite.

She looked at me up there and said, "I'm ashamed of you."

"For running out on the old sot?" I said.

"He's your father," she said. "He meant no harm, and he thinks the world of you. Now let's go down and let him drink to you."

Helen was beautiful and stubborn and loyal to Dad in a way I'll never understand. I looked at her black hair waving down over her white graduation dress, covering her shoulders and setting off her soft little features like an ebony frame, and I almost gave in. Then the laughter came back to my ears, and I stood firm.

"Dad is a drunk," I told her flatly. "He's rich and generous and the salt of the earth, but he's not only a drunk, he spends a fortune turning other innocent people into drunks every year. I want nothing more to do with him."

I had my special reasons for not wanting Helen around Dad any more. I said, "I want this very plain to you. If we are to be married you must realize that we will not associate with Dad in the future. I have my own income from the wells Mother left me. It's not like Dad's fortune, but we'll get along."

Then I got told off.

"Look, Buster," she said, "for almost four years I've waited for you to thaw out. I mustn't smoke. I mustn't take a cocktail. We mustn't neck—save that for later. So, for four years I've lived like in a convent, and the only fun I've had was when your dad was around."

"Helen," I broke in, "I love you. I want you to marry me, right now. Today. But we must have an understanding."

"Take your eyes off of me," she shrieked. "No more of that! Maybe you can get your satisfaction out of life by staring at people and things, but it's not enough for me."

Then she did something I had strictly forbidden her to do. She threw her arms around me and pressed her lips to mine. She had been drinking! I could smell it on her breath now.

I peeled her off, and when I did she dropped into a chair and stared at me. "That tears it," she said. "I'll marry no stuffed shirt. And you can wipe that horrified look off your face, too. Sure I had a couple high-balls over at the house. And if you think I could go through life with a man who—"

She trailed off, because I had my eyes on hers, drinking deeply of her loveliness. Her face became pale and her body, rigid and strained. She whispered, "Stop it! I won't allow it again. Let me go, I tell you!"

I wasn't holding her. She was perfectly free to move, but she didn't. I was oblivious to all but my thirst for her, and I drank my fill while she writhed in the chair trying to break our visual contact.

When I finished I staggered to a chair. She was exhausted, too. This was a little

different from the many times before. Along with the peace, I had a slight feeling of exhilaration.

I said, "Now let's talk sensibly. You know how I feel about liquor. If we live with Dad it will always be around us with people urging us to drink."

She wasn't listening to me. She said, "George, that thing that—that you do to me with your eyes—it's—not right."

"You used to like it," I reminded her.

"It makes—my soul feel naked," she complained. "And now I don't feel like I had any drinks at all."

At any other time I would have been amused. This was the same girl who was daring me to seduce her only minutes ago. I hadn't even touched her, yet here she was accusing me of something or other.

"You hypnotize me into—into feeling like I want to feel," she said. Then she cried, "And what's more, you stole my drinks!" She got up and slammed out of the room.

I sighed over her irrational behaviour. For years now I had been protecting her against her own weaknesses, her fondness for alcoholic drinks and especially her impulsive sexuality. And what thanks did I get? A door slammed in my face!

Granted, it was harder for her to hold back her emotions than it was for me. Somehow, I had been able to sublimate my terrible desire for her by staring into her brown eyes and drawing freely on the love and compassion I found there. It was apparently satisfying to her, until today, for she had been my undisputed property on the campus from the first date at the freshman ball.

I had no idea how serious my problem was until I went down to the ball-room to search for Helen. She was there all right, off in a corner crying on Dad's shoulder while he filled up her champagne glass with one hand and patted her on the back with the other.

Dad was only 43 then, as tall and strong as I, and a hell of a lot better company for a young girl, I guess. He had jokingly threatened to adopt Helen if I failed to marry her, but the way he had his arm around her waist right now was far from paternal.

I went upstairs and got my bag. In an hour I was on a plane for New York, and the next day I cashed in Helen's steamship ticket for Bermuda and used the other one. I went on a honeymoon all by myself.

ON THE ship and at the resort I deliberately tried to cut Helen out of my mind by falling in love with a half dozen different girls all at once. There was plenty of raw material, once word got around about my oil wells, but I couldn't seem to make the grade. I have always abhorred casual intimacies, and these young females proved much too aggressive in that department. I had a miserable month, and when I returned and checked in at my office the first news I had confirmed my prediction.

Dad had married Helen.

There was a message. They were honeymooning on Long Island Sound, and wouldn't I come and visit them?

I failed to notice the old date on the telegram. Feeling they were safely out of the way I flew to the old homestead out of Houston, figuring on cleaning out my personal effects before Helen took over the family home as mistress and *my stepmother.*

The big old 30-room pile of rock seemed like anything but home as I pulled up to it in a cab. It was dinnertime, and I noticed the lights on in the dining room. From the grin old Tom gave me I thought the servants must be having a party while my father was away, so I rambled in to give them a cheap thrill.

I was completely into the room before I realized that Dad was at the head of the table, Helen at the foot and a sprinkling of important-appearing gentlemen in shoe-string ties in between. It was too late to back out, especially after Dad introduced the strangers as a passel of Southern Senators who were helping out on the Tidelands Oil Bill.

Dad welcomed me home as casually as if I had just been downtown shopping

for a new tie.

Helen was lovely, extravagantly dressed and tipsy. They had all been drinking, and no one would hear my excuses. Having a sharp interest in the Tidelands legislation myself, I couldn't offend the Senators. I let them put on a plate for me.

When I refused the wine everyone kidded me. Dad said, "Don't urge it on him. He can't handle it. When he was sixteen I let him have a shot of tequila, and we found him in the pantry ten minutes later with the upstairs maid."

They all had a great laugh at my expense. Even Helen tinkled at me. The story, of course, was a lie in fact and implication. I had *not* drunk any tequila. and what's more, I hadn't touched the upstairs maid. She was the little Mexican girl who had taught me about my eyes and how to—to do whatever it is I do with them. We were caught in the pantry, but I was only looking into her eyes.

The dinner wore on into a typical festivity, and when I kept my eyes away from the foot of the table it was easy to foster the illusion that things were back as they were in my boyhood before Mother's liver dissolved.

Dad was the pink-faced, genial host drawling his inexhaustible series of long-winded, if genuinely funny jokes. It became difficult for me to keep from staring at Helen. The more she drank the bolder she became with her eyes. Each time I glanced at her, her lids would lift wide, as if inviting me to come in.

There was a new look of maturity in her eyes, but the caution that had sprung to them when I first entered the room gradually dissolved under the influence of the cocktails, red wine, white wine, pink wine and brandy, and now her old affectionate look was warm and open—so much so that I feared Dad would see it.

He did, but responded differently from what I had expected. He stood up and herded the Senators into the billiard room, ignoring Helen and me until he got to the door. Then he turned and said gently, "I expect you would like to get acquainted with your new Ma. See you later on the terrace. Behave, now!"

Helen took him at his word and headed for the terrace. I seated myself across from her, my back to the sunset, and tried my best not to look her in the eyes.

She was drunk, but she could still talk plainly. She said, "You hurt your dad by running out on him like that."

I said, "It looks like you've pretty well healed him up."

She crossed her knees and let a few more curves develop in her posture, but I still wouldn't look her in the face. I knew she was much too decent to put on such a voluptuous act if she hadn't been drinking.

"You were surprised to hear about—our marriage?"

"Not at all," I told her. "That's another reason, the main reason I wanted to get you away. I knew you were attracted to Dad, and I knew he loved you. And it was no father-daughter business, either."

She sighed. "At least you aren't accusing me of marrying him because he has more money."

That had never crossed my mind. Helen had worked her way through college, refusing every cent of help that both Dad and I had tried to force upon her. Dishonesty was not one of her weaknesses.

"Are you happy now?" I asked.

"Almost—completely," she said at once. "I only miss one thing, George, and I didn't realize that until you came in tonight."

I had to look at her now. "What is it?" I asked foolishly.

"Your eyes," she said, and she had me trapped. The sunset reflected in her face, and her eyes were like the poets say, two bottomless pools. Where once I had tasted and sipped, now I fell in bodily and wallowed, partly out of self-pity but mostly in sheer sensuality.

The little Mexican girl had taught me the trick, but she had been young. Helen was a woman, now, and her eyes were moist and warm and demanding, and for the first time I felt the reciprocation of

the licentious liberties I had taken with her in our college days.

Although we were yards apart I consumed her like a flame flashing through a piece of gauze. It was quick and violent and wicked. I knew now what she had meant in the hotel room.

But suddenly I was filled with a great stupor. My head sank back, and I barely could understand Helen's husky words. She chuckled. "It worked again! This is better than benzedrine or black coffee." It made no sense to me.

Helen. But you couldn't expect me to go off and desert her like you did."

He stood at the foot of the bed somewhat embarrassed, yet defiant in a way. "I know, I could have adopted her," he said, "but that wouldn't have been very honest. I loved her, the way you loved her, and I couldn't stand to see her hurt like that."

"Besides," he added, "I guess we were a little tight at the time."

There it was. Liquor again! Probably the marriage would never have occurred

"Nurse! Where's that liver that was here on the table?"

I SCARCELY remember being put to bed. In the morning I had a splitting headache and felt entirely miserable. I suppose it was my conscience plus the tremendous wear of the emotional experience.

My remorse was so great that when Dad came in at ten A.M. and put an ice-pack on my head I almost cried. If I could have found a way to make him understand I would have confessed everything to him. But it was no use.

He was quite sober and in good spirits. "Don't act so ashamed, son," he told me. "So you tied one on! So I expected you to. I know you still think the world of

if both of them hadn't been drinking. Helen and I would have gotten over our differences and been reunited. But now it was ruined, all wrong, and I was in the midst of something I couldn't escape.

That's right. In spite of my attack of conscience, my resolve to stay away from Helen was gone. This part Dad didn't understand. He said, "I suppose you just came back for your things."

I looked at him and said, "Not at all. I have no intention of leaving. This home is half mine."

That rocked him a little. "Hell, son, this is no business. You and—Helen—and I—"

"Don't worry," I said. "I won't touch her. She's yours, body and—" I couldn't bring myself to say, "soul." "Just don't expect me to call her mother," I added bitterly.

Dad stalked out of the room, but when I came down for late breakfast he and Helen were in the best of spirits. It was lunch for them, and beside dad's plate was a tumbler half full of bourbon.

We ate on the terrace, and the sun shown down on that whisky making it gleam at me like a baleful, amber eye. It had grown to mean more than a symbol for my embarrassments. As I stared at it, the golden glint was the distillation of pure evil, the root of my frustrations, Dad's emotional unpredictability and Helen's—what? Infidelity?

The sparkle of the wicked fluid hurt my eyes, and my brain throbbed with mounting pain as I glared at it. Then I became aware of a remarkable thing. The level of the liquor was dropping in the crystal goblet. As I stared my hatred at the vile stuff, it diminished lower and lower, and when Dad finally tipped it up he was surprised to find less than a spoonful left.

I have given much thought to this phenomenon. The nearest thing to a reasonable explanation I can arrive at is some form of psycho-kinesis combined with the destructive power of pure hatred. Where the liquor went I don't know. I suppose it evaporated under the intense power of my loathing.

Dad simply muttered under his breath and reached for the decanter again, but this time he tossed it off before I could repeat my performance. My head buzzed pleasantly with my newly discovered power over my enemy, alcohol.

Helen, it turned out, never drank before evening. She was fresh and beautiful in a simple little cotton frock, and it made my heart ache the way she avoided my eves. She poured my coffee and chattered pleasantly, but never would she look above the top button of my shirt.

There were guests again that evening, as there were almost every evening. Men guests, politicians, ranchers and oilmen. And when they went to the billiard room, Helen and I went to the terrace again. She had drunk considerably less this evening, keeping her gaze averted all during the dinner. But when we were across from each other, alone, she looked up immediately, and it was as if she slipped into my arms. This time we were less frantic about it, and the peculiar stupor slid into my head gently, along with the ineffable happiness that poured from Helen's eyes.

Afterwards, I made my way to my room without help, and sank into a deep, restful sleep.

And this became our daily routine. I was careful to preserve Helen's impersonal attitude toward me and avoided being left alone with her, except in the evening when we went to the open terrace together. To the servants or an inadvertent guest our actions were most circumspect.

Each morning I would awaken feeling poorly, but as soon as I dressed and went down to breakfast I would find one of the liquor decanters that Dad kept all over the house and assert my power over the filthy stuff by lowering the level with my powerful stare, and immediately the exercise of my emotion would pick me up with a pleasant sense of well-being. Not, of course, that I was denying anyone a drink of the stuff, but I guess the very destruction of a few ounces of it disposed of my accumuated hatred.

At times when I annihilated a larger amount than usual, a veritable feeling of euphoria would overtake me, and gradually, I sought this pleasant feeling.

Not only did it dispel my morning affliction, but it helped dismiss my feeling of remorse and guilt about Helen. It helped me reason this thing out, too. After all, I was keeping my word to Dad. I never touched his wife nor gave anyone cause for a breath of scandal.

LIFE was quite bearable for several months. My Houston office took only cursory supervision, and my New York office ran itself. Oil wells produce their wealth with monotonous ease, once they are discovered and in operation, and I was in no mood to speculate on new

wells at the present.

Then Dad had to take a business trip to the East. He took Helen along, and they were gone a week. I missed her dreadfully, but it was nothing compared to the frenzy our separation threw her into. Dad almost caught on when she kept wanting to return, but she convinced him it was just an attack of "nerves."

That first night of our reunion on the terrace she whispered to me that I must never let such a separation happen again. Her eyes flashed into mine greedily, although she had had not a drop to drink.

Our communion was brief but of maximum violence. When it was over Helen was white as a ghost, so pale it frightened me. I called Dad from the billiard room. He picked her up, clucking about her nerves, but as he turned she gave me a little grateful smile.

I, too, was exhausted—and worried. Dad had mentioned a tour of the Riviera in the near future, and he had hinted strongly that I would be expected to stay behind and keep an eye on things.

A week later when he broached the subject to Helen and me at breakfast I thought Helen would break down. She made one excuse after another, delaying their departure date a whole month. Finally Dad became suspicious.

On one of the rare nights when there were no guests, he watched Helen and me wander out to the terrace and followed after. He seated himself on the wicker seat beside Helen and said, "We'll leave for the continent a week from today."

He watched both of us for our reaction. Helen didn't disguise hers too well. Dad turned to her. "You're still very much in love with George, aren't you?"

Helen had had enough to drink to be boldly honest. She nodded, "Of course, I am, but I love you, too. Just as much as ever."

Dad looked at me, and he didn't have to ask me. He said, "That's what I figured. Will you go to Europe with me, Helen, or do you want a divorce?"

"No, no!" she cried. "Not a divorce. I do love you!" She clung to his arm like a little girl, and I could find not the slightest pang of jealousy in me. She loved Dad, and I loved Dad, and he loved us, and we loved each other. It was all so mixed up and yet so simple—if it weren't for the liquor.

Dad had been drinking heavily. He blinked at both of us and said, "Then we'll sail on the Queen Elizabeth."

"That's not the way," Helen wailed. "I don't want to go. I hate Europe!"

"It's the only way," Dad said stubbornly. "Either you're married to me or you're not. We'll find out."

I could say nothing. The following week was nightmarish, but I didn't feel the full impact of my loss until they were gone.

That first night alone in the big house I destroyed the contents of two full decanters of brandy, but the old feeling of power and contentment never appeared. In the middle of the night I awoke with a terrible presentiment.

I got up, dressed, drove to the airport and caught the first plane to New York. I missed their sailing by two hours. I tried to hire a helicopter, but by the time I got customs clearance the Queen Elizabeth was beyond range.

Briefly I considered taking a trans-Atlantic plane and meeting them in London, but I knew that would be too late. Helen was despondent when they left. For the whole of last week Dad had kept us from the terrace. A few more days apart and—

I read about it in the headlines. *Lost Overboard. Beautiful Young Wife of Oil Magnate Disappears in Night Plunge.*

Dwelling on how it must have happened nearly drove me mad. She would have been drinking. Loving me and wanting me, and loving Dad enough to refuse to hurt him by deserting him—she had decided on the quick solution—the quick, clean cut of suicide, instead of the mauling bludgeon of the divorce court, the scandal and the lingering pain it would leave in Dad's heart.

Liquor! She would never have done such a thing sober.

That's when I hit the bars. I bought a hockey-stick in a sporting-goods store and headed for the nearest bars. I

worked my way through three of them before the police caught up to me.

I could afford it. And when they turned me loose I got three more, and three more. Then they started tossing me in the jug, so I returned to Houston and smashed up what I could lay my hands on before they jailed me.

Sure, it was foolish. There's always more liquor to replace what I destroy. And it's foolish for me to go on this way, too, but at least I'm staying out of jail, now.

WHICH brings this George character's tale to an end.

I reach for my double shot, but the glass is empty. Like I said before, I haven't touched it. I know, because it is my first and only drink of the day, and the first one is never hard to keep track of—that's why I never try a second.

Then I notice that the other people at the bar are staring at their empty glasses too.

Mike puts down the bat and gathers up our glasses. As he refills them he mutters to himself, "Now I've seen everything and heard everything!"

He puts them before us and returns to stand in front of George, who is staring at his flushed face in the back-bar mirror. Mike says, "I don't know nothing about psycho-kineeziz, and I'll admit it's as fair a bar trick as I've seen pulled. All I know is that you've disposed of every drink on the bar—three highballs, two singles and a double shot of sour-mash. And that comes to $3.25." He has the ball-bat handy again.

We all look at George. The whites of his eyes now look more like skinned red plums, and his head is weaving just a little. "I know what you think," he said lowly. "You think I'm crazy, don't you?"

Mikes shakes his head. "Nope. I think you've just had too much—to see —six drinks in ten minutes."

George raises his husky voice. "You mean to imply—" he roars.

Mike grips the hat and moves to the telephone and begins dialing in little quick jerks.

"Wait," George says hurriedly. "Don't call the police. They always throw me in the drunk tank. I can't stand that. Stop it! I'll pay. Here!" He tosses a crumpled twenty-dollar bill on the bar, spills off the stool onto unsteady legs and makes for the door. Mike yells at him to pick up his change, but George ignores him.

I watch him lurch out into the dusk, then I look back at my drink. I stare at it hard as I can, but nothing happens. I guess I can't bring enough hate to bear on it.

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She noticed the change in her husband— but she had married for better or worse!

HUMAN IS

By PHILIP K. DICK

JILL HERRICK'S blue eyes filled with tears. She gazed at her husband in unspeakable horror. "You're —you're hideous!" she wailed.

Lester Herrick continued working, arranging heaps of notes and graphs in precise piles.

"Hideous," he stated, "is a value judgment. It contains no factual information." He sent a report tape on Centauran parasitic life whizzing through the desk scanner. "Merely an opinion. An expression of emotion, nothing more."

Jill stumbled back to the kitchen. Listlessly, she waved her hand to trip the stove into activity. Conveyor belts in the wall hummed to life, hurrying

food from the underground storage lockers for the evening meal.

She turned to face her husband one last time. "Not for even a *little* while?" she begged. "Not even—"

"Not even for a month. When he comes you can tell him. If you haven't the courage, I'll do it. I can't have a child running around here. I have too much work to do. This report on Betelgeuse XI is due in ten days." Lester dropped a spool on Fomalhautan fossil implements into the scanner. "What's the matter with your brother? Why can't he take care of his own child?"

Jill dabbed at swollen eyes. "Don't you understand? I *want* Gus here! I begged Frank to let him come. And now you—"

"I'll be glad when he's old enough to be turned over to the Government." Lester's thin face twisted in annoyance. "Damn it, Jill, isn't dinner ready yet? It's been ten minutes! What's wrong with that stove?"

"It's almost ready." The stove showed a red signal light. The robant waiter had come out of the wall and was waiting expectantly to take the food.

Jill sat down and blew her small nose violently. In the living room, Lester worked on unperturbed. His work. His research. Day after day. Lester was getting ahead; there was no doubt of that. His lean body was bent like a coiled spring over the tape scanner, cold gray eyes taking in the information feverishly, analyzing, appraising, his conceptual faculties operating like well-greased machinery.

Jill's lips trembled in misery and resentment. Gus—little Gus. How could she tell him? Fresh tears welled up in her eyes. Never to see the chubby little fellow again. He could never come back—because his childish laughter and play bothered Lester. Interfered with his research.

The stove clicked to green. The food slid out, into the arms of the robant. Soft chimes sounded to announce dinner.

"I hear it," Lester grated. He snapped off the scanner and got to his feet. "I suppose he'll come while we're eating."

"I can vid Frank and ask—"

"No. Might as well get it over with." Lester nodded impatiently to the robant. "All right. Put it down." His thin lips set in an angry line. "Damn it, don't dawdle! I want to get back to my work!"

Jill bit back the tears.

LITTLE GUS came trailing into the house as they were finishing dinner.

Jill gave a cry of joy. "Gussie!" She ran to sweep him up in her arms. "I'm so glad to see you!"

"Watch out for my tiger," Gus muttered. He dropped his little gray kitten onto the rug and it rushed off, under the couch. "He's hiding."

Lester's eyes flickered as he studied the little boy and the tip of gray tail extending from under the couch. "Why do you call it a tiger? It's nothing but an alley cat."

Gus looked hurt. He scowled. "He's a tiger. He's got stripes."

"Tigers are yellow and a great deal bigger. You might as well learn to classify things by their correct names."

"Lester, please—" Jill pleaded.

"Be quiet," her husband said crossly. "Gus is old enough to shed childish illusions and develop a realistic orientation. What's wrong with the psych testers? Don't they straighten this sort of nonsense out?"

Gus ran and snatched up his tiger. "You leave him alone!"

Lester contemplated the kitten. A strange, cold smile played about his lips. "Come down to the lab some time, Gus. We'll show you lots of cats. We use them in our research. Cats, guinea pigs, rabbits—"

"Lester!" Jill gasped. "How can you!"

Lester laughed thinly. Abruptly he broke off and returned to his desk. "Now clear out of here. I have to finish these reports. And don't forget to tell Gus."

Gus got excited. "Tell me what?" His cheeks flushed. His eyes sparkled. "What is it? Something for me? A *secret?*"

Jill's heart was like lead. She put her hand heavily on the child's shoulder. "Come on, Gus. We'll go sit out in the garden and I'll tell you. Bring—bring your tiger."

A click. The emergency vidsender lit up. Instantly Lester was on his feet. "Be quiet!" He ran to the sender, breathing rapidly. "Nobody speak!"

Jill and Gus paused at the door. A confidential message was sliding from the slot into the dish. Lester grabbed it up and broke the seal. He studied it intently.

"What is it?" Jill asked. "Anything bad?"

"Bad?" Lester's face shone with a deep inner glow. "No, not bad at all." He glanced at his watch. "Just time. Let's see, I'll need—"

"What is it?"

"I'm going on a trip. I'll be gone two or three weeks. Rexor IV is into the charted area."

"Rexor IV? You're going there?" Jill clasped her hands eagerly. "Oh, I've always wanted to see an old system, old ruins and cities! Lester, can I come along? Can I go with you? We never took a vacation, and you always promised—"

Lester Herrick stared at his wife in amazement. "You?" he said. "*You* go along?" He laughed unpleasantly. "Now hurry and get my things together. I've been waiting for this a long time." He rubbed his hands together in satisfaction. "You can keep the boy here until I'm back. But no longer. Rexor IV! I can hardly wait!"

"YOU have to make allowances," Frank said. "After all, he's a scientist."

"I don't care," Jill said. "I'm leaving him. As soon as he gets back from Rexor IV. I've made up my mind."

Her brother was silent, deep in thought. He stretched his feet out, onto the lawn of the little garden. "Well, if you leave him you'll be free to marry again. You're still classed as sexually adequate, aren't you?"

Jill nodded firmly. "You bet I am. I wouldn't have any trouble. Maybe I can find somebody who likes children."

"You think a lot of children," Frank perceived. "Gus loves to go visit you. But he doesn't like Lester. Les needles him."

"I know. This past week has been heaven, with him gone." Jill patted her soft blonde hair, blushing prettily. "I've had fun. Makes me feel alive again."

"When'll he be back?"

"Any day." Jill clenched her small fists. "We've been married five years and every year it's worse. He's so—so inhuman. Utterly cold and ruthless. Him and his work. Day and night."

"Les is ambitious. He wants to get to the top in his field." Frank lit a cigarette lazily. "A pusher. Well, maybe he'll do it. What's he in?"

"Toxicology. He works out new poisons for Military. He invented the copper sulphate skin-lime they used against Callisto."

"It's a small field. Now take me." Frank leaned contentedly against the wall of the house. "There are thousands of Clearance lawyers. I could work for years and never create a ripple. I'm content just to be. I do my job. I enjoy it."

"I wish Lester felt that way."

"Maybe he'll change."

"He'll *never* change," Jill said bitterly. "I know that, now. That's why I've made up my mind to leave him. He'll always be the same."

LESTER HERRICK came back from Rexor IV a different man.

Beaming happily, he deposited his anti-grav suitcase in the arms of the waiting robant. "Thank you," he smiled. "Thank you."

Jill gaped speechlessly. "Les! What —"

Lester removed his hat, bowing a little. "Good day, my dear. You're

looking lovely. Your eyes are clear and blue. Sparkling like some virgin lake, fed by mountain streams." He sniffed. "Do I smell a delicious repast warming on the hearth?"

"Oh, Lester." Jill blinked uncertainly, faint hope swelling in her bosom. "Lester, what's happened to you? You're so—so different."

"Am I, my dear?" Lester moved about the house, touching things and sighing. "What a dear little house. So sweet and friendly. You don't know how wonderful it is to be here. Believe me."

"I'm afraid to believe it," Jill said.

"Believe what?"

"That you mean all this. That you're not the way you were. The way you've always been."

"What way is that?"

"Mean. Mean and cruel."

"I?" Lester frowned, rubbing his lip. "Hmm. Interesting." He brightened. "Well, that's all in the past. What's for dinner? I'm faint with hunger."

Jill eyed him uncertainly as she moved into the kitchen. "Anything you want, Lester. You know our stove covers the maximum select-list."

"Of course." Lester coughed rapidly. "Well, shall we try sirloin steak, medium, smothered in onions? With mushroom sauce. And white rolls. With hot coffee. Perhaps ice cream and apple pie for dessert."

"You never seemed to care much about food," Jill said thoughtfully.

"Oh?"

"You always said you hoped eventually they'd make intravenous intake universally applicable." She studied her husband intently. "Lester, what's happened?"

"Nothing. Nothing at all." Lester carelessly took his pipe out and lit it rapidly, somewhat awkwardly. Bits of tobacco drifted to the rug. He bent nervously down and tried to pick them up again. "Please go about your tasks and don't mind me. Perhaps I can help you prepare—that is, can I do anything to help?"

"No," Jill said. "I can do it. You go ahead with your work, if you want."

"Work?"

"Your research. In toxins."

"Toxins!" Lester showed confusion. "Well, for heaven's sake! Toxins. Devil take it!"

"What, dear?"

"I mean, I really feel too tired, just now. I'll work later." Lester moved vaguely around the room. "I think I'll just sit and enjoy being home again. Off that awful Rexor IV."

"Was it awful?"

"Horrible." A spasm of disgust crossed Lester's face. "Dry and dead. Ancient. Squeezed to a pulp by wind and sun. A dreadful place, my dear."

"I'm sorry to hear that. I always wanted to visit it."

"Heaven forbid!" Lester cried feelingly. "You stay right here, my dear. With me. The—the two of us." His eyes wandered about the room. "Two, yes. Terra is a wonderful planet. Moist and full of life." He beamed happily. "Just right."

"I DON'T understand it," Jill said.

"Repeat all the things you remember," Frank said. His robot pencil poised itself alertly. "The changes you've noticed in him. I'm curious."

"Why?"

"No reason. Go on. You say you sensed it right away? That he was different?"

"I noticed it at once. The expression on his face. Not that hard, practical look. A sort of mellow look. Relaxed. Tolerant. A sort of calmness."

"I see," Frank said. "What else?"

Jill peered nervously through the back door into the house. "He can't hear us, can he?"

"No. He's inside playing with Gus. In the living room. They're Venusian otter-men, today. Your husband built an otter slide down at his lab. I saw him unwrapping it."

"His talk."

"His what?"

"The way he talks. His choice of

words. Words he never used before. Whole new phrases. Metaphors. I never heard him use a metaphor in all our five years together. He said metaphors were inexact. Misleading. And —"

"And what?" The pencil scratched busily.

"And they're *strange* words. Old words. Words you don't hear any more."

"Archaic phraseology?" Frank asked tensely.

"Yes." Jill paced back and forth across the small lawn, her hands in the pockets of her plastic shorts. "Formal words. Like something—"

"Something out of a book?"

"Exactly! You've noticed it?"

"I noticed it." Frank's face was grim. "Go on."

Jill stopped pacing. "What's on your mind? Do you have a theory?"

"I want to know more facts."

She reflected. "He plays. With Gus. He plays and jokes. And he—he eats."

"Didn't he eat before?"

"Not like he does now. Now he *loves* food. He goes in the kitchen and tries endless combinations. He and the stove get together and cook up all sorts of weird things."

"I thought he'd put on weight."

"He's gained ten pounds. He eats, smiles and laughs. He's constantly polite." Jill glanced away coyly. "He's even—romantic! He always said *that* was irrational. And he's not interested in his work. His research in toxins."

"I see." Frank chewed his lip. "Anything more?"

"One thing puzzles me very much. I've noticed it again and again."

"What is it?"

"He seems to have strange lapses of—"

A burst of laughter. Lester Herrick, eyes bright with merriment, came rushing out of the house, little Gus close behind.

"We have an announcement!" Lester cried.

"An anounzelmen," Gus echoed.

Frank folded his notes up and slid them into his coat pocket. The pencil hurried after them. He got slowly to his feet. "What is it?"

"You make it," Lester said, taking little Gus' hand and leading him forward.

Gus' plump face screwed up in concentration. "I'm going to come live with you," he stated. Anxiously he watched Jill's expression. "Lester says I can. Can I? Can I, Aunt Jill?"

Her heart flooded with incredible joy. She glanced from Gus to Lester. "Do you—do you really mean it?" Her voice was almost inaudible.

Lester put his arm around her, holding her close to him. "Of course we mean it," he said gently. His eyes were warm and understanding. "We wouldn't tease you, my dear."

"No teasing!" Gus shouted excitedly. "No more teasing!" He and Lester and Jill drew close together. "Never again!"

Frank stood a little way off, his face grim. Jill noticed him and broke away abruptly. "What is it?" she faltered. "Is anything—"

"When you're quite finished," Frank said to Lester Herrick, "I'd like you to come with me."

A chill clutched Jill's heart. "What is it? Can't I come, too?"

Frank shook his head. He moved toward Lester ominously. "Come on, Herrick. Let's go. You and I are going to take a little trip."

THE three Federal Clearance Agents took up positions a few feet from Lester Herrick, vibro-tubes gripped alertly.

Clearance Director Douglas studied Herrick for a long time. "You're sure?" he said finally.

"Absolutely," Frank stated.

"When did he get back from Rexor IV?"

"A week ago."

"And the change was noticeable at once?"

"His wife noticed it as soon as she saw him. There's no doubt it occurred

on Rexor." Frank paused significantly. "And you know what that means."

"I know." Douglas walked slowly around the seated man, examining him from every angle.

Lester Herrick sat quietly, his coat neatly folded across his knee. He rested his hands on his ivory-topped cane, his face calm and expressionless. He wore a soft gray suit, a subdued necktie, French cuffs, and shiny black shoes. He said nothing.

"Their methods are simple and exact," Douglas said. "The original psychic contents are removed and stored —in some sort of suspension. The injection of the substitute contents is instantaneous. Lester Herrick was probably poking around the Rexor city ruins, ignoring the safety precautions—shield or manual screen—and they got him."

The seated man stirred. "I'd like very much to communicate with Jill," he murmured. "She surely is becoming anxious."

Frank turned away, face choked with revulsion. "God. It's still pretending."

Director Douglas restrained himself with the greatest effort. "It's certainly an amazing thing. No physical changes. You could look at it and never know." He moved toward the seated man, his face hard. "Listen to me, whatever you call yourself. Can you understand what I say?"

"Of course," Lester Herrick answered.

"Did you really think you'd get away with it? We caught the others—the ones before you. All ten of them. Even before they got here." Douglas grinned coldly. "Vibro-rayed them one after another."

The color left Lester Herrick's face. Sweat came out on his forehead. He wiped it away with a silk handkerchief from his breast pocket. "Oh?" he murmured.

"You're not fooling us. All Terra is alerted for you Rexorians. I'm surprised you got off Rexor at all. Herrick must have been extremely careless. We stopped the others aboard ship. Fried them out in deep space."

"Herrick had a private ship," the seated man murmured. "He by-passed the check station going in. No record of his arrival existed. He was never checked."

"Fry it!" Douglas grated. The three Clearance agents lifted their tubes, moving forward.

"No." Frank shook his head. "We can't. It's a bad situation."

"What do you mean? Why can't we? We fried the others—"

"They were caught in deep space. This is Terra. Terran law, not military law, applies." Frank waved toward the seated man. "And it's in a human body. It comes under regular civil laws. We've got to *prove* it's not Lester Herrick—that it's a Rexorian infiltrater. It's going to be tough. But it can be done."

"How?"

"His wife. Herrick's wife. Her testimony. Jill Herrick can assert the difference between Lester Herrick and this thing. She knows—and I think we can make it stand up in court."

IT WAS late afternoon. Frank drove his surface cruiser slowly along. Neither he nor Jill spoke.

"So that's it," Jill said at last. Her face was gray. Her eyes dry and bright, without emotion. "I knew it was too good to be true." She tried to smile. "It seemed so wonderful."

"I know," Frank said. "It's a terrible damn thing. If only—"

"Why?" Jill said. "Why did he—did it do this? Why did it take Lester's body?"

"Rexor IV is old. Dead. A dying planet. Life is dying out."

"I remember, now. He—it said something like that. Something about Rexor. That it was glad to get away."

"The Rexorians are an old race. The few that remain are feeble. They've been trying to migrate for centuries. But their bodies are too weak. Some tried to migrate to Venus—and died instantly. They worked out this system

about a century ago."

"But it knows so much. About us. It speaks our language."

"Not quite. The changes you mentioned. The odd diction. You see, the Rexorians have only a vague knowledge of human beings. A sort of ideal abstraction, taken from Terran objects that have found their way to Rexor. Books, mostly. Secondary data like that. The Rexorian idea of Terra is based on centuries-old Terran literature. Romantic novels from our past. Language, custom, manners from old Terran books.

"That accounts for the strange archaic quality to *it*. It had studied Terra, all right. But in an indirect and misleading way." Frank grinned wryly. "The Rexorians are two hundred years behind the times—which is a break for us. That's how we're able to detect them."

"Is this sort of thing—common? Does it happen often? It seems unbelievable." Jill rubbed her forehead wearily. "Dreamlike. It's hard to realize that it's actually happened. I'm just beginning to understand what it means."

"The galaxy is full of alien life-forms. Parasitic and destructive entities. Terran ethics don't extend to them. We have to guard constantly against this sort of thing. Lester went in unsuspectingly—and this thing ousted him and took over his body."

Frank glanced at his sister. Jill's face was expressionless. A stern little face, wide-eyed, but composed. She sat up straight, staring fixedly ahead, her small hands folded quietly in her lap.

"We can arrange it so you won't have to actually appear in court," Frank went on. "You can vid a statement and it'll be presented as evidence. I'm certain your statement will do it. The Federal courts will help us all they can, but they have to have *some* evidence to go on."

Jill was silent.

"What do you say?" Frank asked.

"What happens after the court makes its decision?"

"Then we vibro-ray it. Destroy the Rexorian mind. A Terran patrol ship on Rexor IV sends out a party to locate the—er—original contents."

Jill gasped. She turned toward her brother in amazement. "You mean—"

"Oh, yes. Lester is alive. In suspension, somewhere on Rexor. In one of the old city ruins. We'll have to force them to give him up. They won't want to, but they'll do it. They've done it before. Then he'll be back with you. Safe and sound. Just like before. And this horrible nightmare you've been living will be a thing of the past."

"I see."

"Here we are." The cruiser pulled to halt before the imposing Federal Clearance Building. Frank got quickly out, holding the door for his sister. Jill stepped down slowly. "Okay?" Frank said.

"Okay."

WHEN they entered the building, Clearance agents led them through the check screens, down the long corridors. Jill's high heels echoed in the ominous silence.

"Quite a place," Frank observed.

"It's unfriendly."

"Consider it a glorified police station." Frank halted. Before them was a guarded door. "Here we are."

"Wait." Jill pulled back, her face twisting in panic. "I—"

"We'll wait until you're ready." Frank signaled to the Clearance agents to leave. "I understand. It's a bad business."

Jill stood for a moment, her head down. She took a deep breath, her small fists clenched. Her chin came up, level and steady. "All right."

"You ready?"

"Yes."

Frank opened the door. "Here we are."

Director Douglas and the three Clearance agents turned expectantly as Jill and Frank entered. "Good," Douglas murmured, with relief. "I was beginning to get worried."

The siting man got slowly to his feet, picking up his coat. He gripped his

ivory-headed cane tightly, his hands tense. He said nothing. He watched silently as the woman entered the room, Frank behind her. "This is Mrs. Herrick," Frank said. "Jill, this is Clearance Director Douglas."

"I've heard of you," Jill said faintly.

"Then you know our work."

"Yes. I know your work."

"This is an unfortunate business. It's happened before. I don't know what Frank has told you—"

"He explained the situation."

"Good." Douglas was relieved. "I'm glad of that. It's not easy to explain. You understand, then, what we want. The previous cases were caught in deep space. We vibro-tubed them and got the original contents back. But this time we must work through legal channels." Douglas picked up a vid-tape recorder. "We will need your statement, Mrs. Herrick. Since no physical change has occurred we'll have no direct evidence to make our case. We'll have only your testimony of character alteration to present to the court.'

He held the vid-tape recorder out. Jill took it slowly.

"Your statement will undoubtedly be accepted by the court. The court will give us the release we want and then we can go ahead. If everything goes correctly we hope to be able to set up things exactly as they were before."

Jill was gazing silently at the man standing in the corner with his coat and ivory-headed cane. "Before?" she said. "What do you mean?"

"Before the change."

Jill turned toward Director Douglas. Calmly, she laid the vid-tape recorder down on the table. "What change are you talking about?"

Douglas paled. He licked his lips. All eyes in the room were on Jill. "The change in *him*." He pointed at the man.

"Jill!" Frank barked. "What's the matter with you?" He came quickly toward her. "What the hell are you doing? You know damn well what change we mean!"

"That's odd," Jill said thoughtfully. "I haven't noticed any change."

Frank and Director Douglas looked at each other. "I don't get it," Frank muttered, dazed.

"Mrs. Herrick—" Douglas began.

Jill walked over to the man standing quietly in the corner. "Can we go now, dear?" she asked. She took his arm. "Or is there some reason why my husband has to stay here?"

THE man and woman walked silently along the dark street.

"Come on," Jill said. "Let's go home."

The man glanced at her. "It's a nice afternoon," he said. He took a deep breath, filling his lungs. "Spring is coming—I think. Isn't it?"

Jill nodded.

"I wasn't sure. It's a nice smell. Plants and soil and growing things."

"Yes."

"Are we going to walk? Is it far?"

"Not too far."

The man gazed at her intently, a serious expression on his face. "I am very indebted to you, my dear," he said.

Jill nodded.

"I wish to thank you. I must admit I did not expect such a—"

Jill turned abruptly. "What is your name? Your *real* name."

The man's gray eyes flickered. He smiled a little, a kind, gentle smile. "I'm afraid you would not be able to pronounce it. The sounds cannot be formed. . . ."

Jill was silent as they walked along, deep in thought. The city lights were coming on all around them. Bright yellow spots in the gloom. "What are you thinking?" the man asked.

"I was thinking perhaps I will still call you Lester," Jill said. "If you don't mind."

"I don't mind," the man said. He put his arm around her, drawing her close to him. He gazed down tenderly as they walked through the thickening darkness, between the yellow candles of light that marked the way. "Anything you wish. Whatever will make you happy."

Illustrated by
VIRGIL FINLAY

Have Your Past Read, Mister?

By ROBERT ZACKS

JOE'S face was bleak as he stared out the window at the golden sunshine spilling off the pastel green streets outside. He'd been in a miserable mood lately, unable to shake it off, despite every psychological trick he used to get free of it. Deep, deep inside something was eating at him. He wouldn't face it.

Irritably he squirmed. He pressed the wall button and the whole side of the cottage smoothly slid up, folding out of sight. The spring breeze flooded in, mussing his hair and playfully slapping his face. It didn't make him feel any better.

From the doorway, Ann said, "What's

Why Read the Future — When You Don't Know Your Past!

the matter, dear?"

Joe was startled. "Huh? Nothing. Nothing."

She stood there, a placid woman, pleasant but not pretty, her robe of shining green cloth clutched about her pudgy figure. A distressed look was on her face, a touch of fear. She came in and sat down next to Joe.

"Lately you've been unhappy," she said.

"I—ah—guess it's the job," he muttered. "I'm always this way before facing that damn job."

"Three hours a day," Ann said quietly. It was a simple reproof, a tearing away of the mask hiding his shrinking misery.

"Well," he growled, "I don't know what it is, then."

He didn't look at her. He was suddenly angry at the vast guilt feelings that surged in him.

"I'll fix you a good breakfast," she said hopefully. "Got a new spice from Venus."

"Not hungry," he snarled, and stopped in shame and shock at himself as she recoiled. "Sorry," he mumbled.

For a bad moment they didn't look at each other. Then she got up wearily, prepared breakfast—ordinary toast, eggs and coffee—just like a hidebound Traditionalist fighting even with his foods to retain a semblance of the old ways of thinking.

They ate in silence, then Ann dressed. She kissed him with a touch of desperation as he left for the automatic factory where he was a maintenance man who did nothing but read meters and watch for lights flashing, indicating the needs for a new part in the vast machine.

Joe thought unhappily, What's the matter with me? Why am I such a louse to her these days?

But of course he knew, even though as a mature person he'd erected tremendous defenses against letting the infantile thought grow.

HE MIGHT have killed the tormenting idea that he was fed up with her, that he deserved something better than Ann, somebody prettier, more exciting, more of a challenge, if it weren't that he now had to pass a certain corner. And the tantalizing sign which blazed in luminous letters to smirking passersby:

HAVE YOUR PAST READ!
ONLY THREE CREDITS

Joe stopped and frowned in angry disapproval. Maybe he wasn't a registered Traditionalist, but one thing they stood for with which he agreed—the elimination of this kind of disgraceful gypsying.

"Why don't they stop these guys?" he muttered wrathfully.

Belligerently he stared into the window. An unshaven man in a dirty shirt squatted on a cushion on the floor, his lips pursed in a soundless whistle as he cautiously cut his toenails with scissors. A sleazy woman in a multicolored dress and ancient long earrings lovingly examined a tarnished golden necklace of coins.

She looked up, caught Joe's eye, pointed to the sign and beckoned.

Furiously Joe went inside, even though he knew his friends would look at him with raised eyebrows if they saw him.

"Listen," he growled, "why don't you gypsies take your three hours' duty like the rest of us? You all ought to be locked up, that's what I say!"

"We're hurting nobody," said the man, smiling, pausing with his toenail cutting. "Nobody supports us but ourselves."

"Read your past, mister?" asked the woman mockingly. She laughed shrilly. "That's what you *really* came in for, isn't it?"

"I know my past!" shouted Joe, turning his eyes with a sort of fascinated dread on the machine set against the wall.

It was a huge crystal ball supported by a square metal box which contained, he knew, complex circuits and equipment that the Traditionalists were fighting like mad to have destroyed. So far they'd managed to keep a large number of the population away by means of intensive propaganda and social organization.

"You know your past?" said the woman. She laughed. "Which one?"

Suddenly Joe's mouth was dry. He licked his lips.

"It's a fake," he whispered. "The whole thing's a fake."

"Sure," said the man, nodding, grinning. "It's a fake. But interesting. Entertaining. Want your past read, mister?"

Joe backed away. "No," he said, almost whispering.

"Only three credits," wheedled the woman, cringing beggarlike, but looking at him with glittering eyes. "Let me look into the crystal ball. Let me read what might have been if—"

"*If?*" Joe was hypnotized.

"If you'd taken any other action at any point in your life; if you'd moved along another probability line; if instead of studying one field you'd studied another and so affected your whole existence. If you'd killed the man you felt like killing, not done the thing you're sorry you did, loved another woman instead of—"

"What do I do?" said Joe. It came from his throat like a whisper.

They sat him down. He put both hands on a small metal plate before the crystal ball and they flicked a lever.

"Your fingerprints," said the man, his eyes bright. Then they put a metal band around his head, fitted the electrodes. "Your brain pattern," said the man, grinning again. "We need data."

"Mumbo jumbo," said Joe trying to scoff.

They did other things to the machinery. Then they switched a lever.

"Look into the crystal ball," said the man as the room grew strangely dark and the ball began to glow. "Which *if* do you select?"

"Suppose," said Joe in a thick and trembling voice, "I hadn't proposed to Ann."

The man and the woman suddenly laughed wildly. Joe started to pull the band off his head, to stand up and shout at them and threaten to have them arrested, but he stopped dead because an image was forming in the crystal ball.

There he was, seated in a living room, his *present* living room, except that the curtains were blue instead of chocolate brown. And opposite him was a woman who wasn't Ann. She was dark instead of blonde, but aside from that there really wasn't much difference because the woman was pudgy, unhappy and patient.

AND SHE was looking at him with Ann's unhappy resolution. His tiny image was ignoring her and he was glumly reading a newspaper.

"That's what you'd be doing right this moment on the other probability plane," said the gypsy man.

"B-but she—she's just like—"

The gypsy woman's laugh shrilled. "Maybe you make them that way," she cackled.

Swiftly she flicked a lever, switched another, turned a dial.

"Parallels," she chanted. "Search the parallels, let me know, mister, when you see your present wife, and I'll stop the machine."

In the crystal ball fast five-second images came, paused, disappeared. Images of all the people affected by the new *if*. Joe screamed as Ann appeared.

"Stop—stop!"

His mind reeled. It was Ann, in the crystal ball, and yet it was not Ann. She was beautiful, glowing, clad in furs. She was on a stage before applauding thousands, holding a bouquet of roses, smiling her gratitude, waving her thanks graciously. And beside her was a man, imposing, handsome and laughing. The man suddenly kissed Ann and she clung to him happily as the crowd went absolutely wild.

"W-what—who—" stammered Joe.

"I don't know," said the gypsy, shrugging. "She sure looks better off, doesn't she? Too bad. If only you hadn't proposed to her—"

"It's a fake!" screamed Joe.

He tore off the metal band and fled.

When he came home in the early afternoon he brought a large bouquet of red roses. • • •

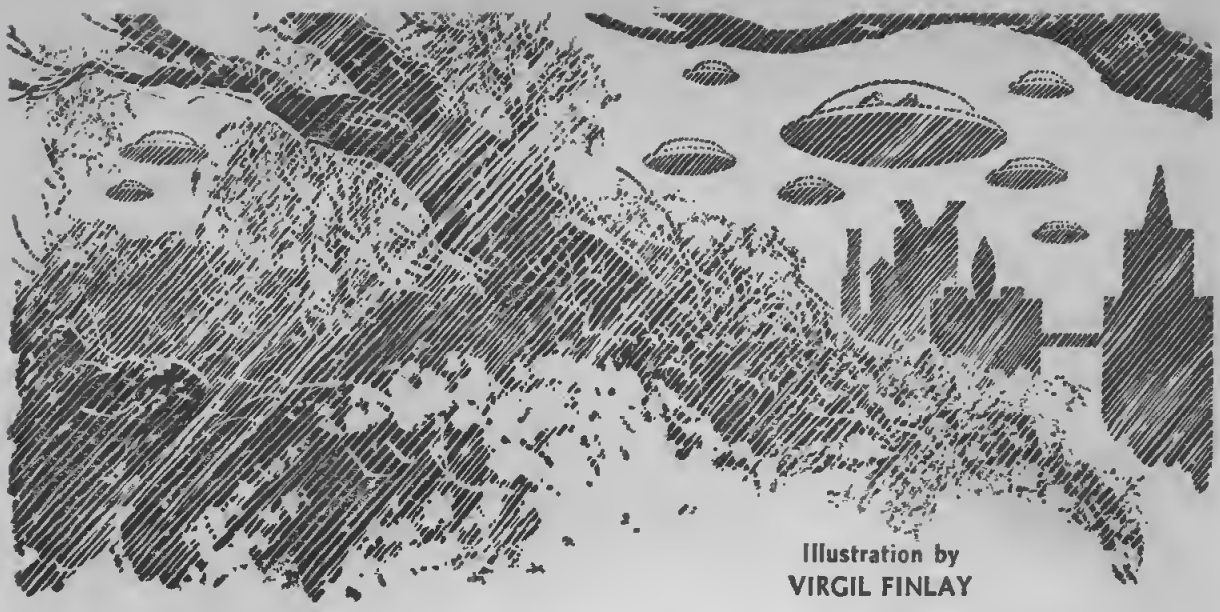

Illustration by
VIRGIL FINLAY

More Stately Mansions

a novelet by ROBERT F. YOUNG

A.D. 2150—2200: *Man had at last pinned down happiness. He no longer visualized it symbolically as a bluebird that was forever flitting just beyond his reach: he visualized it solidly as a house, and his status in his society was commensurate to the number of bricks or the number of board feet his house contained.*

Now if a society which reveres beauty respects artists and if a society which reveres ideas respects philosophers, a society which reveres buildings cannot fail to respect builders. Add to this propensity the incontrovertible fact that real estate values had been on an upward spiral for the past two hundred years plus the equally incontrovertible fact that construction unions had been growing progressively stronger for a similar length of time, and you have some conception of the aristocracy which flourished during the latter part of the twenty-second century.

—Nath-Ouiros,
TERRAN ARISTOCRACIES;
p. 461-2.

I

It must constantly be kept in mind that there are only two kinds of edifices. One kind is built of stone, the other of ideas.

—Ibid., p. 462.

KATHY met the Thoreau one Saturday morning in May when she was picking violets in the woods. She picked

The poor girl and the rich man's son faced an age-old problem . . . and each with a different idea of happiness

Virgil Finlay

violets every spring and sold them in the village. That way she was always able to buy a new dress for summer and her pupils never had to be ashamed of her when they attended her classes in the ancient twentieth century school.

The Thoreau was sitting by a small stream, reading a book. He looked up when she emerged from the underbrush on the opposite bank. "Good morning," he said.

Kathy's hair was as dark as April nights, and if you looked close you could see blue skies deep in her eyes. Her mind was prose and poetry. She had inherited her father's books as well as his vocation, and she had read them, every one.

"Good morning," she replied. "You —you frightened me for a minute."

"I'm quite harmless," the Thoreau said.

Kathy was barefoot. She waded through the stream and climbed up on the grassy bank. The Thoreau's hair was quite long, she noticed, but he was freshly shaven and he was wearing a clean white shirt. She glanced at the book he was reading. "Wordsworth?" she asked.

He nodded. " 'The Wye above Tintern.' "

"I like that one," Kathy said . . . " 'Once again I see these hedge-rows, hardly hedge-rows, little lines of sportive wood run wild—' "

"You're a school teacher, aren't you?"

"Are you going by my familiarity with Wordsworth, or my rags?"

"Neither. Your eyes betray you. There's something about them, a hope, an aliveness, that most people's eyes lack."

"Thank you," Kathy said. "You're very kind."

"Not kind. Honest . . . Why don't you sit down?"

She hesitated a moment, then dropped down beside him on the bank. "You're the first Thoreau I've seen for a long while," she said.

"We're a vanishing species. Waldens are rare phenomena in the twenty-second century, and besides, it's so much easier to conform . . . My name is Paul Darrow."

"I'm Kathy Gray."

"I'm glad to know you, Kathy." He noticed the small bunch of violets in her hand and he reached over and touched them. "I know where there's a whole clearing full of them," he said. "Want me to show you?"

"Oh yes!" Kathy said. She got to her feet and he stood up beside her. A thought struck her. "I—I sell them, you know," she said. "Does that make a difference? I mean, you needn't show me where they are if it does."

HIS gray eyes touched her thin face, her ragged dress, her bare feet. "Come on, I'll show you," he said, "I'll help you pick them."

He left the bank of the stream and entered the forest. Kathy followed. The aisles between the trees were still damp with dew and the forest floor was mottled with sunlight. The Thoreau walked with long graceful strides, the sunlight dappling his brown hair and his wide spare shoulders. He seemed acquainted with every tree, with every rise and fall of ground.

The clearing was in a marshy hollow. It was like coming outdoors after a purple rainfall and seeing the grass glistening with myriad purple drops. "Why," Kathy gasped, "they're beautiful!"

"I come here every day," the Thoreau said. He knelt down and began to pick, breaking the stems flush with the ground. Kathy knelt beside him, her bare knees sinking into the soft wet earth.

When each of them had picked five bouquets apiece, she stood up.

"That's enough," she said. "Someone else might want to pick some."

"No one ever comes here," the Thoreau said, rising. "Except me. And now you. Perhaps you'll come again."

"Perhaps," Kathy said.

His gray eyes met hers and she saw how deep they were. There was a re-

assuring quality about them, a maturity that contradicted the youthfulness of his face. There was another quality about them too, a quality that eluded her at first, and then shocked her when she identified it for what it was—an almost poignant loneliness.

He pointed across the clearing to the opposite side of the hollow. "My cabin is just over the rise," he said. "Would you like to see it? There's a small lake almost at my front door—I call it 'Walden' of course—and I have a collection of books. Keats, Shelley, Byron—"

"No—not today," Kathy said. "I haven't time."

"All right." His expression did not change but she sensed his disappointment. He handed her the violets he had picked. "I hope you have luck selling them," he said. "Buy a white dress. You'll look lovely in white."

He could not have helped but guess, it had been so obvious. Yet somehow she did not feel in the least embarrassed. She did not even drop her eyes. "I'll try to get a white one," she said . . . "Goodbye."

"Goodbye, Kathy."

She ran lightly into the forest. She paused once, and looked back. He was still standing in the clearing, the sun misting his hair, tinting his face with quiet gold. She waved, and he waved back, and then she ran on again, her heart beating in rhythm to the soft pounding of her feet.

SHE had reached the village and was walking up the sunlit street when the big floater drifted down beside her and settled to the ground. Her eyes widened when she saw the Mortarson crest on the gleaming door, then rose unbelievingly from the minuscule mortar box and tiny crossed hoes to meet the brown eyes of the young man behind the controls. A vision of the huge Mortarson mansion usurped her mind, and she remembered all the times she had walked timidly past the high brick wall, slowing her steps when she came to the gate so that she might glimpse the lofty brick façade with its haughty colonnades, but most of all so that she might glimpse the sacrosanct Mortarsons themselves.

And now, for the first time in her life, she was within a few feet of one of them —the heir apparent himself, Anthony Mortarson VI. There was no mistaking him. She had seen his picture innumerable times in the society section of *The Constructor,* and once she had seen a close-up of him on a televised Mortarson fox hunt. But seeing him in person was quite a different experience from seeing either his animate or inanimate image.

"What beautiful violets! Are you selling them?"

Her eyes dropped from his blunt, aristocratic face to his tailored denim jacket. She raised them diffidently to the golden insigne on his white bricklayer's helmet, as though to reassure herself of his reality. "Yes—yes, sir," she murmured.

"I'd like to buy them." There were crisp green credit notes in his hand.

"If you like, sir."

"How much for all of them?"

"There's no fixed price, sir. Whatever you care to give."

He held out three of the notes. She accepted them and gave him the violets. Their hands touched briefly and it was as though the contact had activated a reciprocal emotional circuit. Kathy forgot the suburban street. She even forgot that she was a school teacher, and she was unaware of the curious stares of the passers by. She was cognizant of nothing but the opaque brown eyes of Anthony Mortarson VI.

When he spoke his voice was different. It was deeper now, and his words trembled ever so slightly. "What do you do evenings?" he asked.

"Sometimes I go walking, sir."

"Where?"

"Usually on the old turnpike, west of town."

"Will you be walking there tonight?"

"If you wish, sir."

"I'll look for you . . . Around nine."

"Yes sir."

The moment ended then. The floater quivered, began to rise. Kathy watched it ascend into the May sky, make a wide leisurely turn and dart southward toward the Mortarson mansion. . . .

Her first reaction was to reject the incident entirely. Princes might court peasant girls in fairy tales, but in real life they passed disdainfully by them on white chargers, or over them in black floaters, and went calling on princesses, or plumbers' daughters. Then she remembered the credit notes in her hand. Incredulously, she counted them.

There were more than enough for a new dress, and she ran as fast as she could to the Mortarsonville shopping center and bought the first white one she saw. She could hardly wait till she got home and tried it on. She lived on the outskirts in a ramshackle five room bungalow with an anachronistic verandah and a leaky roof. Wind-washed maples stood in the cool front yard and there was an apple orchard in the back.

Breathless, she stood in her bedroom and surveyed herself in the cracked mirror. The Thoreau had said that she would look lovely in white, and he had been very close to the truth. But she thought of him only fleetingly as she compared the smooth darkness of her shoulder-length hair to the dazzling cascade of the dress. Instead, she thought of Anthony Mortarson.

II

KATHY walked along the turnpike slowly, watching the violet shadows inch down from the hills, listening to the drowsy bird calls that sounded from the forest. Green fingers of grass reached up through the cracks and fissures in the crumbling macadam, brushing her bare feet. Above her, hoary elms and maples met in rustling consultation.

The turnpike had no function in the year 2190. It was a remnant of a different era. It still wound through hills and mountains, crossed deserts and struggled through forests. It even touched a town now and then, and sometimes even a city; but essentially it had been dead ever since the first mass produced anti-grav floater had rolled off the assembly line and risen into the sky.

Once, Kathy knew, it had flowed with flashing vehicles. The battered history books in the ancient school had a great deal to say concerning the automobile age. It was an age of chrome and grandeur: a fantastic age during which it was possible to buy houses over periods of less than fifty years, an incredible age that supported an aristocracy totally unversed in the building arts, an impossible age during which school teaching was a respected, well paying vocation.

Sometimes Kathy didn't believe the history books. Sometimes she would have the feeling that she was reading lies. At such moments she almost believed that her vocation was just as non-essential as everybody said it was, that the visio-audio techniques of trade and technical institutions really had obviated any need of books and teachers, and that history, literature and the humanities were detrimental to a progressive technological culture.

But literature always restored her faith. She didn't call it "literature" out loud, of course—only to herself. Aloud, she was always careful to use the same word (though not the same tone of voice) that other people used: "readin." But underneath it was literature just the same; underneath it was still Shakespeare and Milton and Swift and Dryden —everything her father had read to her, and everything she herself had read, during the long quiet evenings after his death. . . .

Night had nearly fallen when the floater descended. Its landing lights caught Kathy in their glaring focus and it drifted down beside her, hovering just above the macadam. Her heart was pounding painfully. She hadn't really thought that he would come, and now that he had she didn't know what to say. She stood there, taut and frightened, illogically ashamed. She wished suddenly that she were home, safe with her books; but when he opened the door and

she saw his face, handsome and reassuring in the roseate light of the control panel, she slipped into the seat beside him.

He rose to cruising level immediately, and the earth became a vast dark mass of hills and valleys, inlaid with the jeweled lights of villages. Kathy could hear the rushing sound of the night wind past the open vents and she could feel its damp coolness against her cheek. In the distance the city showed, an orange fire reddening the horizon.

They flew for miles in silence. Finally: "What's your name?" he asked.

"Kathy, sir. Kathy Gray."

"Mine's Tony. I guess you knew that."

"Yes, sir."

"Not 'sir.' 'Tony.' "

"Yes, Tony."

He reached forward and depressed one of the innumerable lighted buttons on the control panel. Subtly, the cowling shifted from opacity to transparency. The stars leaped out, bright and stabbing against the deep dark immensity of the sky.

"Oh, how beautiful!" Kathy gasped.

"They're real bright tonight," Tony said. "Ever been to a sky-bar?"

"No."

"We'll stop in one after awhile. I know a nice quiet one. Nice atmosphere, nice music—"

"Oh, I'm afraid I couldn't sir!"

"Why not?"

"I—I have no shoes." The night wind was cold against her hot cheek. She wished desperately that she had not come.

After a long moment, he laughed softly. "Well what do you know!" he said. "So you're the village schoolmarm!"

"I—I took it for granted that you knew. I shouldn't have. I'm sorry, sir."

"My name is still Tony."

"I'm sorry, Tony."

"Well don't be. I didn't really want to stop in a sky-bar anyway. It's nicer just flying around."

Kathy was silent. Values whirled bewilderingly in her mind. Up until a moment ago she had never seriously questioned her *status quo;* there had been a serene sense of rightness about carrying on her father's work, no matter how hopeless the task seemed at times, no matter what people said behind her back. Her house was built of books, not bricks, and until now she had always measured her wealth accordingly.

But now her house was tottering.

THE orange fire of the city had become a white cold blaze of lights. Sky-bars began to appear, swimming like gaudy islands in the night sky. Skytels were floating precipices, aflame with windows, and sky-signs obscured the stars with multicolored commercials.

Air traffic thickened, and Tony flew slower. Shift change was in progress and thousands of commuters were hurrying back to their mortgaged brick or clapboard castles. The city blazed brighter and brighter, its white flames of buildings licking the feet of the disdainful stars. When they reached the outskirts Tony put the floater into a wide U-turn and they started back.

Kathy kept glancing over her shoulder. She had never seen the city at night before and she was fascinated. She did not notice at first that the floater was gaining altitude. When she did notice, she located the altimeter on the panel and followed its quivering indicator with her eyes. 9000, 10,000, 11,000, 12,000— The indicator hesitated, then steadied at 12,500. Beneath the glowing numerals were two tiny words. Leaning forward, she made them out: *Parking Level.* When she leaned back she felt Tony's arm against her shoulders.

"My pretty little schoolmarm," he said.

Kathy sat very still, her hands clasped tightly on her lap. Love-making, in her mind, was a jumble of moonlight and gardens and Tennysonian passages, and such a conception necessarily fell far short of the exigencies of the moment.

"What's the matter?" You're as cold as mortar."

"Am I?"

"Look at me, Kathy."

Diffidently, she turned her head. His face was unreal in the starlight. It grew closer, blurred. Suddenly a sense of wrongness pervaded her, and at the last moment she turned her face away. His lips brushed her cheek.

She sensed his instant anger, heard it in his words: "Don't play games, teacher. I don't like to play games." His arm tightened around her shoulders and he turned her head forcibly with one wide calloused hand. His face descended again.

Kathy twisted violently. His lips brushed her cheek for the second time, and she heard the hoarse sound of his breathing. She disengaged his arm and moved as far away from him as she could on the narrow seat. "Take me home, sir!" she said.

"Just who in hell do you think you are?" His voice had tightened and grown cold.

"I'm Kathy Gray."

"You're Kathy Gray. And do you know who I am?"

"Anthony Mortarson VI, sir."

"And you still want me to take you home?"

"Yes sir."

He opened his mouth as though to say something more. Then he closed it. Abruptly he turned toward the control panel and jabbed the acceleration and altitude buttons simultaneously. The floater dropped giddily to cruising level, picking up momentum. Wind screamed past the vents and the white blaze of the city dwindled to red embers on the horizon.

He did not take her home. Instead, he dropped the floater down to the section of the old turnpike where he had picked her up. He opened the door. "Get out," he said flatly. "I don't know what world you're living in, but go back to it and stay. You don't belong in this one!"

III

THERE are non-conformists in every community. The non-conformists of Mortarsonville lived on the fringes of the village and managed to subsist on small farms despite the fact that agricultural corporations made individual farming precarious. That in itself was enough to set them apart from their fellow men, for Mortarsonville, like most villages, was a suburb in disguise, freed from the city's skirts by the high speed and extreme maneuverability of the floater; and land, in the eyes of the suburbanites, was something pleasant to look at, not soil to be tilled.

Farming, however, was merely a minor aberration in the behavior pattern of the non-conformists of Mortarsonville.

It was rumored, for instance, that they read books of evenings, and that one of them maintained an amateur playhouse in his barn. And it was a known fact that they did not believe that trade and technological institutions completely fulfilled the needs of education. It was this final heresy that led to the ultimate aberration that officially stamped the lot of them as outcasts.

They sent their children to school.

KATHY arose early Monday morning and fixed breakfast. She wasn't very hungry and she picked disinterestedly at her eggs and bacon. She drank her coffee while she did the dishes, then she packed a small lunch and started out.

It was a fine May morning. Grass glistened wilth translucent dew, and the new leaves of elms and maples quivered ecstatically in the first sweet breath of the nascent day. In the village proper the roof doors of garages were opening and commuter-floaters were rising into the blue sky, darting off to keep their rendezvous with industry. Behind stereotyped façades housewives were settling comfortably down in viewing rooms to await the first sensual, and on geometric lawns and amid disciplined hedges, small children were setting out in imaginary pursuit of the traditional enemies of Western Civilization: Indians, Sheepmen and Martians.

To reach the school, Kathy had to pass

through the shopping center. Ordinarily she did not mind, but this morning she was acutely aware of the averted eyes of the shop keepers, of the occasional contemptuous glances of the early morning shoppers, and for the first time in her life she was ashamed of her bare feet.

The Constructor's Trust Building seemed even more austere than it usually did, and she walked past it quickly. She came to the lavish grounds of the local technological institute and she kept her eyes down so that she would not see the shining modern building, or the bookless students strolling along the winding concrete walks beneath the unacademic elms. Finally she came to the unused side street and turned down it toward the school.

The school was over two centuries old, but fortunately it had been a well-built structure. The foundation was still solid and the walls still true. Most of the windows were shattered of course, and the heating unit had long ago gone awry; but the building was serviceable enough during the warm months, and if you really wanted to teach, you could teach as well in spring and summer as you could in winter.

Her pupils were awaiting her—all nine of them. They had taken their seats behind the archaic little desks in the room she had set aside to conduct her classes in. It was by far the best preserved room in the one-story structure and its southern exposure conveniently solved the lighting problem. Two of its blackboards were in reasonably good condition, and on the mildewed wall above Kathy's desk there was a recognizable portrait of Charles William Eliot.

Usually Kathy was proud of her pupils. She was proud to be their teacher and proud to receive each week the small stipend which was all their parents could afford to give. She enjoyed walking into the classroom each weekday morning and seeing their scrubbed shining faces and their bright inquisitive eyes.

But this morning she was not proud. This morning their faces left her indifferent. And there was a quality about the drab room that had been absent before—a quality that chilled the warmth that pervaded her when she touched the old books, that canceled out the enthusiasm that leaped into her mind when she opened the first treasured volume.

SHE began the lessons listlessly. She was unprepared when Nora, the youngest of her pupils, cried: "There's a big floater outside, Miss Gray, and a man's coming up the walk!"

Kathy managed to retain her outward composure, but it was hardly more than a flimsy veneer behind which her emotions romped like irrepressible children. She met him just outside the main entrance. He had his white helmet in his hands and he kept twisting it around and around. There were scattered specks of gray mortar clinging to his tailored denims and tiny globules of perspiration gleamed on his wide forehead. "Good morning," he said.

"Good morning, sir."

"I know you're surprised to see me. But I've been thinking about what I said the other night and—"

"You said I didn't belong in this world," Kathy interrupted, "and you were perfectly right."

"No I wasn't! I had no business saying that at all." (With a shock she saw that his eyes were contrite, that there were faint shadows beneath them.) "You belong here as much as I do. It's just that you think different . . . You're the first schoolteacher I ever knew."

"That's hardly surprising, sir. Our social levels aren't exactly on the same plane."

"Kathy, I'm trying to apologize. It's not easy."

"Oh," Kathy said. "I didn't know."

"I guess I took a lot for granted the other night. Too much for granted. None of the other girls I took out acted like you. I mean, most of them were so proud to be with a Mortarson, they—" He paused, his face reddening.

"It's not that I wasn't proud to be with you, sir. It's just that—"

"It's just that you're different, that's

all? Can I see you again?"

Kathy was speechless. The classical poets, whose love lyrics formed the basis of her sex knowledge, had neglected the most important aspect of their subject: psychology. Consequently she was completely uninformed on the finer points of the game and failed to realize that in repulsing Anthony Mortarson and thereby disfiguring his self-image, she had done the one thing most likely to guarantee his continued interest in her.

"You *will* let me see you again, won't you, Kathy?"

"Why—why I guess so, sir," she said finally.

"Tonight?"

"If you wish, sir. But I have to be in early. I have classes tomorrow."

"Tonight then." His face was radiant. "I'll pick you up at your house. No, don't tell me where it is—I'll find it all right." He put his helmet on. "I have to get back to work now," he said. "Goodbye, Kathy."

"Goodbye, sir."

She watched till the floater was a barely discernible speck in the sky, then she returned to the classroom and resumed the lessons. But she read the printed words like a stranger, and the yellowed pages were dead beneath her fingers.

IV

JUNE came. Warm winds flowed northward and soft rains fell. The green of trees and grass took on a deeper hue, and the night skies exhibited a new wealth of diamond-bright stars. June, and then July. Cicadas began their afternoon crescendoes and the evenings were cloyed with warmth. When she flew with Tony in the floater, Kathy opened the vents wide and let the cool upper air wash over her. They were flying together every night by then, starting out with the first star and returning when Sagittarius was showing high in the south.

It wasn't until early in August that she saw the Thoreau again.

IT WAS a Friday evening and she was sitting on her veranda steps, listening to the first night sounds and watching for the first star. She was wearing her white dress.

The Thoreau came up the path that wound among the maples. She did not recognize him for a moment. She had almost forgotten him.

"Good evening, Kathy," he said.

She remembered him then: his young, yet oddly-aged face; his gray, questing eyes; his tall, lean body. "Why . . . Good evening," she said.

"I gave up hope you'd ever come back for more violets, and then I started hoping you might come to see my cabin and my lake." He smiled a smile that wasn't quite sure of itself. "Finally I stopped hoping altogether and tried to forget you. I couldn't."

"But why not?" Kathy glanced over his head at the special place in the sky where, very shortly, the first star would appear. "I should think I'd be easy to forget."

He shook his head. "Every time I sit down to write I see your eyes, and after I've written your eyes away I see your mouth. And then I see your hair, and then your face, and finally I see you running into the woods, your arms filled with the violets we picked . . ."

"But I don't understand," Kathy said. "What are you trying to write?"

"My own personal 'Walden,' I suppose."

"But why? Who will read it?"

"Probably no one." He took a step forward, then hesitated. "Do you mind if I sit down?"

"Oh, I'm sorry," Kathy said. "I should have asked you."

He dropped down on the veranda steps at her feet, sitting sideways so that he could look up into her face. "You *do* look lovely in white," he said.

"Thank you."

"I'm going to put you in my book, just the way you are now—sitting on the steps, watching for Venus to come out."

[*Turn to page 88*]

From Out Of The

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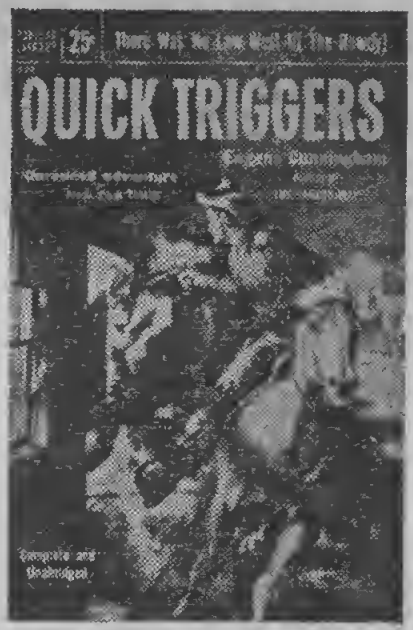

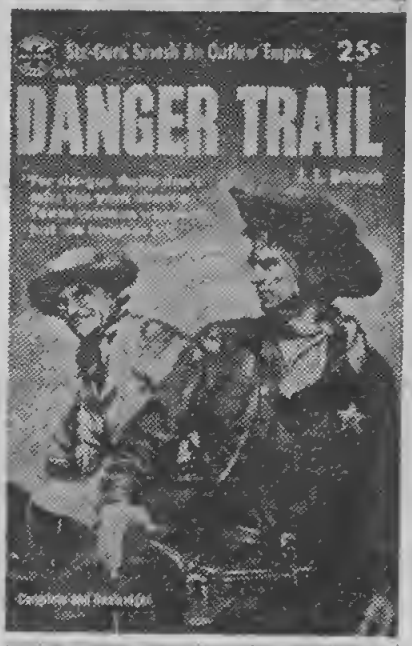

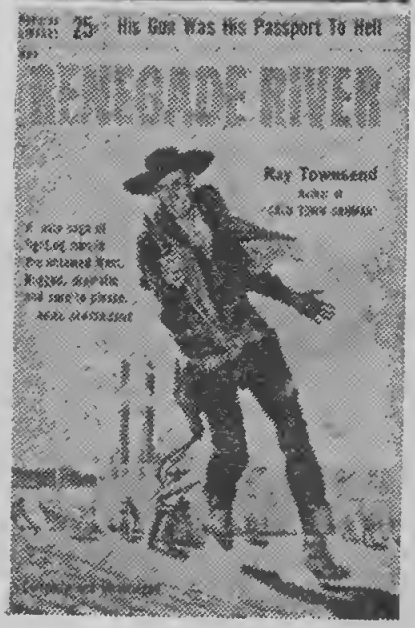

Confused, she dropped her eyes to his face. His gray eyes were guileless. "I—I'm afraid I don't belong in books," she said.

"You belong in mine."

"I still don't see why you're writing one."

"Someone has to write them, else they won't be written. I thought you'd understand, Kathy."

"But things are different now. Nobody writes books any more."

"I write them," the Thoreau said.

"Books are a part of the past. It's unrealistic to try to write them now. It's like—why it's like someone in the time of Hemingway chiseling out crude symbols on a monolithic tablet. We have different mediums of communication now, improved mediums. . . ."

Her voice trailed away when she realized that he was staring at her. For a moment she was ashamed of her apostasy, and then, abruptly, she was angry.

"Yes, it's true," she went on. "We *do* have improved mediums of communication. Why should you expect anyone to read a book when he can acquire a technical education by practical means? When he can experience a sensual at the flick of his finger? When he can live through any documentary he chooses? And we also have improved living conditions, available to anyone with sufficient ambition to work for them. People like you and me are contemptuous of houses not only because we lack the talent to drive nails or lay bricks but because we lack the courage to mortgage our lives to pay those who *do* have the talent to perform the task for us. And we rationalize our incompetence and our cowardice by clinging to outmoded values, by reading the works of misfits who couldn't accept the realities of their civilizations either; by running off into the forest in imitation of a man who hated progress, who hated houses—"

"Who loved ideas . . . What's happened to you, Kathy?"

"Nothing's happened to me. I've just been thinking. For the first time in my life I've really been thinking."

"Thinking, or rationalizing from the other side of the fence?"

She looked at him, startled.

"It's not a secret," he continued. "Everyone in the village knows that Anthony Mortarson is in love with you."

"He's not!" Kathy cried.

"I think he must be," the Thoreau said. "How could he help but be? You're the first real woman he's ever known."

"You're being cynical."

"I'm being honest—something you're not being when you say that you've been thinking for the first time in your life. For the first time in your life you've stopped thinking. You've forced yourself to accept a perverted system of values. You're fawning at the feet of the Great God Tech with all the rest of them. And you're rejecting an eternal essential truth. Civilizations are built of ideas, Kathy; not of bricks or boards or electrical appliances."

She glanced away from his face, unable to meet his eyes. She looked up at the sky. The first star was just coming out, a timid whisper of light. She saw the descending floater then, and she stood up hurriedly. "I have to go now," she said.

The Thoreau rose beside her. "You're a schoolteacher, Kathy," he said softly.

Kathy ignored the remark. The floater had come down in the front yard and was hovering just above the grass. "I'm sorry to have to run off like this," she said.

"Ready, Kathy?" Tony Mortarson called.

"I'm coming," she said. She looked up at the Thoreau's face. "Goodbye," she said.

"Goodbye, Kathy."

She ran lightly to the floater and slipped into its reassuring depths. Just before they rose into the night she caught a final glimpse of the Thoreau standing by the steps. He stood there quietly, his face a white blur in the intensifying darkness. There was a quality of aloneness

about him that was almost tangible, but there was another quality that tempered it: a quality of being a part of the night, of belonging to the essence of the earth; to trees and stars and darkness; to the blue sky; to the rising sun and the dew on dawn grass; to love and hope and idealism; to a world disdainful of the transient edifices of man, contemptuous of the brick and mortar frills of civilization.

"I DIDN'T know I had a rival," Tony said.

"Don't be absurd, darling. That was just a Thoreau."

"A *Thoreau?*"

"You know. One of those men who live in the woods."

"Kathy, I can't understand you associating with anyone like that!"

"I—I met him last spring," Kathy said. "I never saw him again till tonight. He stopped by and asked if he might sit on the steps. I—I couldn't very well say no."

"Next time you'll be able to."

"I don't understand."

"Kathy, I want to marry you."

She sat there numbly, unable, at first, to speak. The stars spread out lavishly above her and the dark earth lay below. There was no sound but the wind sound and the wild throbbing sound of her thoughts. She found words finally, inane words that stumbled when she spoke them, that had nothing whatever to do with her heart. "But—but you can't," she said.

"Why can't I?"

"I—I'm a schoolteacher. Did you forget. And you're a Mortarson."

He laughed softly. "I told my father all about you, Kathy. I even told him how I feel about you."

"Tony, you didn't! He must have been furious!"

"He *was* kind of upset. But he calmed down after a bit and finally I convinced him that the least he could do was to meet you. So Sunday morning I'm going to take you over to the house. Once he sees you he won't be able to say no."

"But, Tony, I can't go to your house. I haven't—"

"Oh yes you have!" He reached into the compartment beneath the control panel and produced a rectangular white box. "Open it," he said. "I got the smallest ones I could find."

They were fragile white shells, tapered to exquisite points and garnished with blue bows. "Why, they're beautiful!" Kathy breathed.

"Try them on."

She slipped her feet into the shoes diffidently. They were soft and cool and delightful. She felt like Cinderella. She laughed shyly to herself. *Like* Cinderella? She *was* Cinderella!

"Kathy, you will marry me, won't you?" the King's son said.

"I—I don't know what to say. I need time to think."

"I'll give you till Sunday. Will you tell me then?"

"Yes." Kathy said, "I'll tell you."

V

IN DISCUSSING the values of the late years of the twenty-second century, an old quotation comes ironically to mind. It is accredited to an ancient king, Alfonso of Aragon, and constitutes his conception of the four best things of life: "Old wood to burn! Old wine to drink! Old friends to converse with! Old books to read!"

—Ibid, p. 462-3.

THE house was an architectural potpourri. Originally it had been a simple four-story structure, but now it was a complex affair of too many wings and ells. A plethora of chimneys gave it a Byzantine effect, and an imposing loggia running the entire length of the façade superimposed an incongruous American Colonial motif. Lawns and parks encompassed it, and behind it, half a mile distant, was a well-stocked hunting forest.

Kathy felt uncomfortable the moment she stepped from the floater onto the lawn. The colonnades of the loggia rose awesomely above her, white and glaring

in the morning sunlight. Tony took her arm and helped her ascend the brick steps. He opened the door for her. "Don't be afraid," he whispered.

The great hall was cool and foreboding. Kathy felt very small. Almost, she wished that she hadn't come. The living room was at the end of the hall. It was huge and dim, the morning sunlight filtering into it through green-tinted glass-brick windows. The walls were done in ornamental brick and a thick red rug with a brickwork pattern covered the floor. There was a tremendous fireplace to the right of the door. Before it, in a voluminous armchair, an old man was sitting. Piles of books were scattered all around him.

Tony cleared his throat. "Good morning, sir."

The old man turned his head. He was *very* old, Kathy saw. His first four wives had given him only daughters and he had had to take a fifth before obtaining a fitting heir. His face was round and his features blunt. His short arms terminated in square gnarled hands. The hands were holding a book, an old old book. Kathy almost gasped when she glimpsed the title: *The Odyssey.*

He looked at Kathy. "This is the one?" he asked in a deep dissonant voice.

"Yes, sir," Tony said. "Kathy, this is my father."

"How do you do, sir," Kathy said.

"She's a pretty one all right," the old man said. He continued to look at her with small rheumy eyes. It was a warm morning but there was a fire burning in the hearth. It was a smoky fire and gave forth a peculiar pungent odor.

Presently the old man dropped his eyes to the book in his hands. He riffled the pages absently, then, deftly, he tossed it into the fire. The yellowed pages fluttered wildly just before the flames caught them. He procured another book from the nearest pile. "When you get to be my age you need a good fire to keep you warm," he said. "Even in summer."

Kathy held herself tight. Her eyes sought the title of the new book in horrid fascination: *Complete Poems,* Milton. "Yes—yes, sir," she said.

"Books are cheaper to burn than wood these days," the old man went on. "I picked up two cord in the city yesterday." He threw Milton into the fire.

Words screamed in Kathy's mind as the flames touched them:

To hear the lark begin his flight,
And singing startle the dull night,
From his watch-tower in the skies,
Till the dappled Dawn doth rise—

"Well, what do you think of her, sir?" Tony said, his voice calm and matter-of-fact as though he were completely unaware that the world was breaking up into little pieces and forming a new asteroid belt around the sun. "Isn't she everything I said she was?"

"She's kind of quiet," the old man said. He picked up another book.

"But she's not used to you yet. She'll talk after she's been here awhile, won't you, Kathy?"

Kathy was staring at the new book, trying to make out its title. It was a thin, leather-bound volume, the gold lettering on its spine nearly obliterated. *The Poems of Oliver Wendell Holmes.*

"Kathy, did you hear me?"

She turned toward him slowly. "Yes," she said. "Yes, I heard you." She left his side and walked over to the chair where the old man was sitting. She took the book from his hands. "Excuse me, sir," she said, "but before you burn it there's a passage I'd like to read to you."

She opened the book. Her eyes scanned the pages till they came to the deathless lines. Her voice was rich and full and the resonant words filled the room, cheapening the tawdry brickwork with their quiet dignity:

" 'Build thee more stately mansions,
O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the
last,

Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thine outgrown shell by life's unresting sea!'"

The room had become a tomb and the old man sat like a cadaver in his chair, surrounded by his cairns of books. Kathy laid the thin volume on his lap. "Here," she said, "you can burn it now . . . I don't want to marry your son. I could never live in a house of bricks."

Tony stood like a gray guardian at the door of the tomb. Kathy paused before him. She looked once more into his eyes, realizing for the first time that they were empty, that there was no sun in them, no sky; that there wasn't the faintest vestige of a dream behind them.

"Goodbye, Tony," she said.

SHE walked out of the house and into the sunlight. She removed her shoes and left them at the base of one of the tall colonnades, then she ran across the lawn, her bare feet sinking into the soft cool grass. The guard at the gate looked at her curiously but he did not stop her, and presently she was in the forest.

It was pleasant among the trees. Beeches were colonnades in their own right, tall and blue-gray, rising sedately into the green mist of foliage. The sunlight was a golden treasure scattered prodigiously over the forest floor, and patches of blue sky peeped through interstices of leafy branches.

When she came to the little stream she waded through its limpid coolness. The clearing where the violets had been still held the memory of a purple rainfall and a boy and a girl on their hands and knees gathering beauty. She ascended the rise beyond it, her heart pounding. Statuesque pines towered all around her and the ground was resilient with fallen needles. When she reached the summit the first thing she saw, twinkling between the trees, was a blue lake.

She descended the slope slowly. The pines thinned out and green grass began. She saw the cabin on the blue lip of the lake, and the garden just behind it. The Thoreau was in the garden, hoeing.

When she came to the edge of the garden, she paused. For a moment she was afraid. Then, when he looked up and she saw his face, she knew that it was all right, and she ran toward him lightly, seeing the loneliness fade from his eyes when she came up to him, and feeling the warmth of his smile.

A. D. 2200—2250: *The depression of 2202 coincided with the publication* of Walden II *by an obscure woodland poet. While, unlike the bluebird, man's cherished house could not fly away, he discovered that his ownership could, and once his ownership was gone he learned the true worth of his values. He needed new ones to supplant them, and* Walden II *supplied them.*

The back to earth movement began late in 2203, and the return to literature and the humanities followed soon after. The bluebird came into its own again, and man discovered once more that the most delightful aspect of business was its tendency to appear the moment he stopped looking for it.

—Ibid, p. 476.

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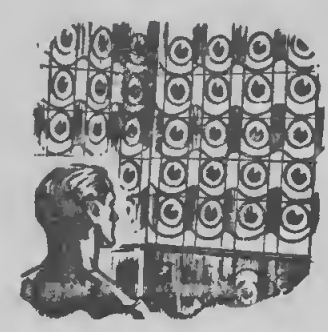

Can Man Build a Better Brain than His Own?

AT A recent party, the wife of a university professor approached me and asked, "Dr. Gunther, if they invent mechanical brains nowadays that can do the most difficult mathematical operations, why don't they invent the brain of a housemaid? That ought to be much easier."

"You are mistaken," I said. "Your husband teaches calculus, doesn't he?"

"Yes."

"You see, if we ignore the qualities your husband has as a father, husband and citizen and concentrate only on his ability to teach calculus, it would be much easier to imitate his brain than that of a servant."

"You don't mean to say," she asked incredulously, "that it is simpler to design a brain that does highly skilled work than some mechanism that would clean the house, serve at the table and fetch the children from school! You don't need much intelligence for *that.*"

Feeling a little uncomfortable, I answered. "I am sorry, but you are wrong again. In cybernetics you must revise your conventional conceptions as to what is intelligent. From the viewpoint of the theory of the mechanical brain, much more intelligence is involved in doing the work of a housemaid than in teaching differential calculus."

I shall never be invited to a party at that house again.

This little conversation illustrates the general misconception of the basic idea of cybernetics. However, the intellectual misorientation toward this new discipline is not confined to the amateurs. It is rampant in scientific circles, too, although there it assumes more subtle aspects. The present tacit assumption of the scientist and scholar in the cybernetic field is that the ultimate aim of the newly-created science is to design an exact replica of the human brain—a greatly improved replica, to be sure, that does its thinking faster, handles more details and is practically error-proof. Never mind the functional improvements; structurally it will be a faithful imitation of the human brain.

To me this seems a fundamental mis-

Third in a Series by a Noted Metaphysician

conception of the general aims of the theory of cybernetics. Misorientations of this kind have frequently occurred in the history of scientific thought. Let us recall the most famous of all.

For centuries natural science was dominated by the alchemistic aim to distill the "philosopher's stone," that is, the proto-materia or primordial substance out of which all things are made. This was clearly a misorientation of legitimate scientific intentions.

Finally, however, a reorientation took place: alchemy became chemistry. Present-day cybernetics is in a similar quandary, and has not yet found its proper goal. It cannot be the legitimate intention of the cyberneticist to duplicate the human brain. If not, what should his legitimate aim be?

To find the answer, we must look at the problem in a very unsophisticated way. No longer satisfied with the performance of his brain, Man sets out to design an improved replica of it. Well, once upon a time he was not satisfied with the means of locomotion which his legs provided, either. Did he set out to improve upon the leg mechanism? Nothing of the kind. They don't make cars in Detroit that have four, six, eight or twelve pairs of legs with a mechanism that makes them run faster than any human or animal legs could ever do. Instead, man invented a *new mechanical principle of locomotion:* the wheel. True, when man first became dissatisfied with his legs, he dreamed of elongating his steps. Grimm's fairy tale idea has found an extremely modest realization in stilts. But if you want to go from New York to Chicago you won't use stilts—you prefer to take your automobile.

CYBERNETICS is still in that early stage where it dreams about bigger and better legs instead of wheels. To talk without allegory: it is a misconception to talk about mechanical brains in terms of the human brain.

Contrary to some widely held prejudices, the human brain can do much better what it is built for than any of its mechanical imitations, no matter how much the latter may improve during the next centuries. Yes, I know they do their calculations much faster than I do, but so does the man who sells me groceries. On the other hand I have lectured on the mathematical theory of transfinite sets. It would be unkind to put the grocer to that test. I readily admit if it comes to the adding up of grocery bills and similar mental activities you can't beat the mechanical brains—but they will never write a "Hamlet." Generally speaking, their brain activities will never be of the creative kind.

However, let us be a bit careful about that generalization. It goes without saying that our human concept of human creativity is limited to the possible range of human spiritual activity. We do not know anything about the creative power of angelic or divine intelligences. On the other hand we might say—if my readers will permit the temporary use of theological terms—that God has delegated a tiny fraction of His creative powers to us. Now would it not be possible for us to say that man has delegated some of his own creative powers to the mechanical brain? He has delegated them in order to be used in a field in which Man himself can never be creative. But where would that be?

We have pointed out in our preceding articles that the human mind works on the basis of a two-valued thought pattern. It is Aristotelian in its character—or contra-Aristotelian if it lives in a hypothetical seetee world—and it can never transgress its two-valued limits. That holds not only for the rational concepts of the individual intellect, but for all our irritational motives, too. Even all mysticism is two-valued. The very existential roots of Man, as manifested in his sex life, are two-valued. There is no third sex.

It seems very strange, under the circumstances, that we can calculate the laws of three-valued logic. Perhaps it

is not so strange after all, since we can only calculate them, but can never employ them as our own brain-functions. However, that which we can calculate we can build into machines, and here lies the proper destiny of all cybernetic science: not to build a duplicate of the human mind, but a non-Aristotelian brain that works along a three-valued thought pattern. Such a design would be "creative" in a very new sense of the word. It would possess delegated creativity in so far as it could produce thoughts of a three-valued structure of which man is entirely incapable. But it would have them only by virtue of the fact that man has built the necessary laws into the objective mind of the machine.

The proper aim of cybernetics is not the mechanical repetition of the subjective (personal) mind of Man or of the contra-subjective mentality of "seetee" Man, but the creation of a new kind of three-valued brain. The aim of cybernetics is the para-human brain. I shall therefore demonstrate how two basic concepts of Aristotelian logic, the negation (—) and the conjunction *and* (·) would work in the three-valued brain of a robot.

Using the symbols *p* and *q* as two related statements, the following is the table of definition for ~ and • as developed in the preceding article:

p	~ p
(true) 1	2 (false)
(false) 2	1 (true)

~ *p* shall be read *not p*, and by prefixing ~ to *p* you can, as the table shows, alter the value of *p* from 1 (true) to 2 (false) and vice versa. *And* may be defined by the table:

p	*q*	*p*•*p*
(true) 1	1 (true)	1 (true)
(true) 1	2 (false)	2 (false)
(false) 2	1 (true)	2 (false)
(false) 2	2 (false)	2 (false)

We assume *p* and *q* to be two statements: *p*—"the sun shines," and *q*—"the wind blows." Then the compound statement, "the sun shines *and* the wind blow" is obviously true only if *p* and *q* are true at the same time. This is shown by our table. These two tables show how the negative and the conjunctive work in the human brain. They function, as indicated, in the mind of any man, because our brain is two-valued and follows an Aristotelian pattern. However, the genuine robot brain shall be considered to have three values. This makes it obvious that it must have a second negational pattern because the negation ~ permits us to proceed only from value 1 to 2 and back again, but no further.

From this point on, to stick to our traditional ideas of true and false would be difficult. The reason is this: we are now introducing a third value which subtly alters the meaning of value 1 and 2 as well. What is true for the human mind is false for the seetee mind, and therefore has the combined characteristic—it is true and false at the same time. It is to clarify this superficial contradiction that the third value *must* be introduced. The complexity of the following tables, it should be noted, are not meant to be grasped by either the human (yours *or* mine) mind, or that of the seetee mind, but only by that of the mechanical brain for which all possibilities become logically operable. The mechanical brain recognizes neither human nor seetee values as such. It operates only with positions of values within its mechanism. These positions are 1, 2 and 3, and in order to operate them together we introduce a second table of negation for the mechanical brain:

p	~'*p*
2	3
3	2

From now on we can proceed from value 1 up to value 3. In fact, by com-

[*Turn to page 96*]

VICTIM OF A SAVAGE GRIZZLY

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bining these tables we can produce any value constellation that might occur to the three-valued logic.

In order to find out what *and* means for a robot mentality, we develop a similar procedure for the table of conjunction. Instead of giving *p* and *q* two values (true or false) from now on we shall give them three. This results in the following table:*

p	q	p•q
1	1	1
1	2	2
1	3	3
2	1	2
2	2	2
2	3	3
3	1	3
3	2	3
3	3	3

At this point you may ask how the new three-valued number for *p* and *q* was reached. It is really quite simple. Look again at the two-valued table for the human form of conjunction. You will notice at once that we arrive at the proper value-sequence for *and* in the human sense of the word if we always pick the highest number available in the two independent columns for *p* and *q*. In the first line there is only 1 available for *p* as well as for *q*. So we have to take 1. But in all of the other three lines there is always at least one 2, and *it* is chosen according to our rule of always picking the highest value number for conjunction. Now apply the same value to the truth table for the robot. Whenever the columns for *p* and *q* show a 3, then take *it*. If there is no 3, try to get a 2, and only if neither 3 nor 2 is available place the value 1 in the column for *p·q*. As it happens, this is the case in the first line only.

*Let me emphasize this: do not try to understand this table any more than you would try to make sense of the IBM card's random slots, or construct a sonata from the roll of a player piano. The table merely represents a mechanical pattern which the robot mind requires for its operations of the meaning of *and*.

Thus far we might say that the difference between the human and the robot brain—as illustrated by the important logical term *and*—seems to be nothing extraordinary. One might be tempted to say that it is a difference in degree rather than in kind. As we now have three values with which to calculate, it stands to reason that the definition of *and* should be a little more elaborate. Nevertheless, this is an erroneous conclusion. There *is* a difference in kind. The human brain is able to conceive only one meaning of *and*. We have given it in our two-valued table. In the first of this series of articles we described the concept of a seetee mind, pointing out the fact that a contraterrene intelligence would think with a reversed Aristotelian logic. Consequently the conjunction *and* would have an inverted logical meaning for a brain created out of seetee matter. But as we humans can conceive of only *one* (our own) meaning of *and*, the alien rationality remains unapproachable so far as we are concerned.

On the other hand, a three-valued robot brain is in a more advantageous position. It can conceive of several meanings of *and*. We shall indicate the second meaning of *and* by two dots (··), and we repeat the preceding table with the addition of the value column for the second meaning:

p	*q*	p·q	*p··q*
1	1	1	1
1	2	2	1
1	3	3	3
2	1	2	1
2	2	2	2
2	3	3	3
3	1	3	3
3	2	3	3
3	3	3	3

Now the question is: how did we arrive at the new column of values for *p··q?* Again the answer is quite simple. Remember, we picked the values for *p·q* in the order 3-2-1. Remember also that the seetee mind has the positive (1) and

the negative (2) values reversed, compared with *any other* brain. Therefore, we now reverse the position of the values 1 and 2 in the order according to which we pick them for *and*. In other words: $p \cdot\cdot q$ is defined by the value-order 3-1-2. That means the preference position of 3 remains unchallenged, but wherever there is only 1 and 2 available in the columns of p and q, we now choose 1 instead of 2. Thus we arrive at a different second meaning for *and*. This cannot be done in a two-valued logic. If you don't believe me—try it!

The two columns for $p \cdot q$ *and* $p \cdot\cdot q$ describe the robotic and the seetee meaning of *and*, and show how both are reflected in a three-valued mechanical brain.

We humans do not think in three-valued logical terms, but if we make a special effort we can conceive objectively what the robot means when it thinks three-valued $p \cdot q$. But we cannot conceive of the seetee meaning of *and*. It plainly contradicts our logic. Take for instance the second line of our table. There p has the value of 1 and q is 2. But the value of the compound statement is also 2. Translated into non-symbolic language this means: If the sun shines but the wind does not blow, *the compound statement in seetee language,* "the sun shines *and* the wind blows" is nevertheless true. For us this is manifestly absurd. It illustrates my remark in the first article "The Seetee Mind" that we humans shall never be able to contact such an alien mind directly. What a contraterrene being would think is sheer insanity to us. We recognize it as such. But in the case of the seetee aliens we would not describe their brain function as "thinking"!

There is but one way to get in contact with a truly alien mind—with the help of a robot mediator whose brain pattern is activated by a three-valued logic. Such a pattern has a much wider scope and can include both of the inverted Aristotelian systems in a modified form. Nevertheless, a robot brain is not capable of acting as a mediator between terrene and contraterrene mentality unless it possesses a threefold capacity of conceiving the term *and*—or any other term that might be relevant.

So far we have learned the mechanical brain's own conception of *and*. It is expressed in the value column for $p \cdot q$ and indicates, so to speak, the mental personality, or soul, of the genus robot. But this mechanical brain also knows the seetee concept of *and*. However, that is not enough. In order to play the part of the mediator between us and the seetee mind, our mechanical brain must also have a precise conception of the human idea of *and*. Our next problem, therefore, is to translate the Aristotelian concept of conjunction into terms of a three-valued system of thinking. This can be done as follows: in order to indicate the difference between the seetee and any other mind we reversed the order of the two values 2 and 1. We thus obtained the two preference orders:

3-2-1
1-2-3

A further reversal of values will provide us with the preference order for the human conception of *and*. The next logically possible exchange of value positions will place value 2 ahead of 3. We thus obtain:*

2-3-1

as the order in which the values are picked for the human meaning of *and*.

We can now write down the comprehensive table which covers all possible meanings of *and* in a three-valued logic. This is logically cogent. In a three-valued logic, disjunction can be reached by negation only if you apply the operators $\backsim$ and $\backsim'$ together.

---

*It is impossible to explain, within the scope of this article, why the reversal of 3 and 2 is the next logically possible step. Serious students of symbolic logic are referred to my recent publication, **Die philosophische Idee einer nicht-aristotelischen Logik,** printed in the Proceedings of the XI International Congress of Philosophy, Brussels, 1953 (V-8-4). In this essay the second and third conjunctions are simply introduced through the application of de Morgan's law. We thus obtain:

$$\backsim (\backsim p. \backsim g) \cong p \,..\, g$$
$$\backsim'(\backsim' p. \sim' g) \cong p \,...\, g$$

p	q	$p \cdot q$ (Robot)	$p \cdot\cdot q$ (Seetee)	$p \ldots q$ (Human)
1	1	1	1	1
1	2	2	1	2
1	3	3	3	3
2	1	2	1	2
2	2	2	2	2
2	3	3	3	2
3	1	3	3	3
3	2	3	3	2
3	3	3	3	3

The expression $p \ldots$ defines the human meaning of *and*. Examine the last column of values; you will find that it corresponds exactly to the Aristotelian meaning of *and*. We learned from the two-valued table (page 94) that *and* always has the value 2 whenever there is a 2 in the independent columns p and q. Only $p \cdots q$ in our three-valued table conforms to that rule. In other words, if we follow the preference order of 2-3-1, then the value 2 has overriding preference over the other two values.

EACH of the three conjunctional columns indicates a different mentality. The first conjunction represents the genuine robot mentality in using the concept *and*. The next indicates seetee mentality, seen through the eyes of a mechanical brain, and $p \cdots q$ finally provides us with the meaning of the Aristotelian *and*—if the same is transposed into the three-valued system of a robot brain. By the way, it is interesting to note that the robot concept of *and* agrees more with the human than with the seetee concept. In $p \cdot q$ as well as $p \cdots q$ the compound statement "the sun shines *and* the wind blows" is true only if p and q, (i.e. the single statements), are independently true at the same time. This however, is an illusion. If seetee intelligences had designed the mechanical brain they would say that the robotic concept of *and* was similar to the contra-terrene idea of conjunction $(p \cdot\cdot q)$, and utterly dissimilar to the terrene idea.

It is not our business, however, to describe how this would happen. We are here concerned exclusively with a description of the situation from the human viewpoint. Please take a look at our three-valued table. In all cases where p and q have only the human values 1 and 2, the mechanical brain agrees completely with us. It can not, and never will, contradict us in all conjunctional matters where Aristotelian judgments are involved. It disagrees with us only in cases where a third value is involved. This indicates that if a robot has a soul, it is different from the human.

The human soul (or whatever goes under that word) expresses itself in an intense feeling of personal, *indivisible identity*. All our conscious life is focused in *one* point, the *self*, the *I*. That is why we beings of Aristotelian (or contra-Aristotelian) mentality have only *one* negation, one concept of *and*, of *or*, of implication of casuality, etc. A robot "soul," however, would be organized differently. It would not be based on identity, but on *tri*dentity. In other words: it could shift the personal center of its mental life and reconcile contradictory viewpoints. This would make it the proper mediator between us and the seetee mind.

We humans are not capable of dealing with strictly contradictory viewpoints and situations involving a third value. A Jewish friend of mine once told me a little anecdote which illustrates this.

A rabbi once discussed the problem of the human soul with three of his friends. The first, being a confirmed agnostic, proved unequivocally that man had no soul at all. The rabbi said:

"You are right."

The second of the friends took over and proved equally convincing that all rational beings have souls. The rabbi nodded. "You are right, too."

"Now look here," interrupted the third, "what sort of nonsense is this? They cannot both be right!"

The rabbi sadly assented, "And you my friend, are right too."

There is in this anecdote an implication of a possible third value. But we humans do not have it. The three-valued soul is the "Soul of a Robot."

Illustration by
HUNTER BARKER

Audrey's Moon

By THOMAS KERSH

SHE WAS crying and breaking things again. A door slammed, and I heard glass crash in our sleeping quarters.

I had stopped trying to understand Audrey three weeks ago. In fact, I also stopped talking to her. We couldn't pass the time of day without breaking into a fight, and if I beat her again, I might kill her. Then when the guard ship came to relieve us, I'd be courtmartialed and kicked out of the Service. I had to keep my temper under control.

However, this wasn't easy—especially every time I touched

She Loved Him—Until She Read His Mind . . .

the gap in my front teeth with my tongue. The gum was still sore, and the first-aid kit had no tooth seeds. Audrey had seen to that.

When she saw she'd knocked out my two front teeth with the oxygen bottle, she ran straight to the first-aid kit, rifled it, and ground the tooth seeds underfoot. I wouldn't be able to grow new teeth until the guard ship came, and chewing was uncomfortable as hell. I blacked both her eyes for that one.

I kept hoping she would commit suicide. But I knew that if she killed herself, she'd make it look as if I'd killed her, and I would be punished for her murder without the pleasure of committing it. Sometimes I suspected that she was even trying to goad me into murdering her, just out of spite. Probably the only thing that kept her from it was that she wouldn't be on hand to see me get a dishonorable discharge.

I didn't see how we could stand three more months of it before the guard ship came. I'm a mild tempered guy, and I never had trouble with a space mate until I was assigned to duty with Audrey. Perhaps because the others agreed to a sensible sleeping arrangement without expecting to fall in love.

POOR little Audrey. She came into space service full of poetry, with stars in her eyes, and a heart so soft that I couldn't help pitying her. She had dreams of living glory, of the vast and infinite beauty of the universe. It was almost a religion with her, and it's a wonder that they didn't catch her tendency at the Service Academy. Still, the Academy makes mistakes.

Audrey wasn't a bad kid, but we should never have been put together under a plastic dome on a black rock in the middle of an ocean as large as Earth, fifty light years from the nearest occupied planet.

Samm, she was thinking, *you utter bum.*

I started to block my mind to keep her thoughts out, but I had to reply first. I shot back an image of myself holding her upside down by the ankles and banging her lovely blond head on the floor. She started a telepathic shriek, but I blanked it out and enjoyed the silence.

I glanced at the universal time clock in the center of the dome, hanging just underneath our small artificial sun. It was time to check the psi-scopes that guarded the station out to a depth of one light year. I had to trace the circuits mentally and make sure that everything was in working order.

The worst thing of all was not Audrey's disillusionment, but the fact that we were both telepaths. That's where the Service really slipped up. However, the disillusionment was real. Audrey hadn't seen a single star or a square inch of deep space since she got here, but she might have survived her disappointment. She'd be serving at better stations in her future tours of duty, stations where the isolation was not so complete.

Here, the planet was blanketed with a layer of clouds 40 miles thick. Unbreathable chlorine clouds, at that.

It wasn't actually a planet, but a moon, known officially as K-6347-4-1: the largest satellite of the fourth planet of a sun listed as K-6347. It was medium-sized red sun, and I had seen it only once—on the guard ship, when we approached the system. The planet was the real reason we were there, and it made the red sun look dull by comparison.

It glowed in the sky like a huge ball of pure phosphorescense, which it practically was. Pitchblende Planet, they called it in the Service, and it was one of the most valuable prizes in the galaxy. A survey team spotted it over a century ago, and the Academy engineers still hadn't figured a way of mining it on an economical basis.

It was like having a closet full of money that you couldn't reach because the doorknob was too hot to touch. Nobody had ever been within 5,000 miles of the surface, and the spy rockets that were sent down hadn't shown too much before the radiation knocked out their electronics and drove them haywire. Consequently, no one yet knew exactly

why the whole planet didn't go up in smoke, instead of merely glowing a pale luminescent green.

This was our baby, our job. The first month Audrey and I slept together, we called the planet her Moon. We couldn't see it, of course, but we knew it was there, filling a quarter of the sky above our station on the planet's main satellite. We didn't want to kill each other then, but that was over three years ago. She was so young and so full of happiness that her dreams made me forget myself, and I was making love to her like a mad poet, promising to bring her the biggest moon in the universe, to strew her path with stars, to travel to the end of time for her, and to do other things which would have astonished the high command in the Service. Come to think of it, she seemed to like it, no matter how ridiculous it sounded. Anyhow, that was when we re-named Pitchblende Planet Audrey's Moon.

But there's a limit to such flights of imagination, and nothing could hide the fact—finally—that we were stuck together on a drab little station for four years.

WHEN the Service was founded and crews had to spend long periods alone in space, one of the first rules was that crew members should be man and wife. It seemed the only practical answer to the problem of isolation for years at a stretch, living at close quarters and never seeing anyone else.

It seemed the logical answer, but it didn't work. Man-wife teams had little more luck than all-male or all-female space crews. The final solution was to use a man and woman together but to forbid marriage between them.

The way it worked in the guard section—which Audrey and I and 5,000,000 others belonged to—was a four-year tour of duty starting at the age of fifteen, with a member of the opposite sex. This was followed by a year's leave, and another four-year tour of duty with another space mate. Since you were reasonably sure you'd never see each other after your four years together, it wasn't hard to make allowances and live together in peace. Usually it was a pleasant relationship, and when a man retired at the age of thirty-five after four tours, he'd have some fine memories.

In spite of Audrey's emotional childishness, which I shared for a while, we might have had a smooth four years if we weren't telepaths. The Service's strictest rule, aside from the ban on marriage, was that telepaths couldn't serve together. The danger, of course, is that two telepaths will not be able to stand the intimacy that their ability forces on them.

You can shield your mind at any time, but it's an effort, a strain. It's like holding your arms over your head all day long. A person just can't take it.

I just can't take it, Samm, you bum. Audrey's thought probed through to me. It was getting harder to keep her out.

"Samm!" She had opened the door behind me. I pushed three buttons on the psi-scope panel to keep it automatic, then turned around to face her.

The two black eyes I had given her were no longer puffy, but the discoloration was satisfying to see.

"What can't you take, honey?" I said, sending a couple of obscene images.

Audrey turned pale, and a sick look came over her face. I was almost sorry for her, but I raised a blank in my mind to keep her from knowing.

She covered her face with her hands, and her shoulders shivered as if she had a chill. The thin fabric of her blouse shimmered in the dome's light, and her arms were tan. I could see where the tan was fading under her blouse, now that we weren't taking all-over sunbaths any more.

I'm sorry, I thought to her. I might as well try to make it easier, and she seemed defenseless. *It's not our fault that we're telepaths.*

Tears ran between her fingers, but she suddenly drew her hands away from her face and glared at me. "It's your fault you won't marry me," she cried.

"Who wants to marry?" I said. "Or have a baby? I like the Service. I want

to stay in it." *Anyhow, why marry? You hate me already. What would it be like after a few more years?* I was using telepathy because I wanted to edge back into her mind and find out what was really going on.

I could never probe to the bottom of her motives, but I caught glimpses of a secret pleasure at the thought of breaking the Service regulations. Marriage with a baby wasn't an end in itself for Audrey, but a means of defeating the system around us. She wanted to tell the Service to go jump off the edge of the galaxy.

I caught only little pieces of this feeling, and I'm not sure she recognized it herself, but Audrey was a rebel who wanted her own little civilization. She even wanted to make everybody telepathic. I'd rather jump into a pit full of monsters than live among telepaths. Can you imagine knowing everybody's innermost secrets? Or, even worse, hearing the million drab, everyday thoughts that occupy most minds most of the time? It would be like having to listen to a mediocre radio program twenty-four hours a day.

Non-telepaths are convenient. They're like radios with the power shut off, and it's almost impossible to get into their thoughts. That's why it's always safe to have a telepath and a non-telepath as spacemates: they can have a normal relationship, without the friction that arises when two people are thrust too close together. The telepath can take care of the psi-scope, and the other partner can look after the remaining duties of the dome. There's always enough to do to keep a healthy-minded couple from each other's throats.

I could never forget my first tour of duty with Evie. I was fifteen and she was twenty-five, and I learned everything she had to teach me—which was a lot. So gentle, so understanding that she was practically a psychoanalyst.

Evie. You want to marry her. The thought was so strong inside my head that I jumped. Audrey had overheard me again. I shielded my mind at once.

Now she was angry. The tears were gone, as well as her appearance of helplessness. "So that's why you won't marry me!" She picked up the first-aid kit, which happened to be on the wall near her hand, and started advancing toward me. I edged back.

She raised her arm to throw, and as I tried to dodge, I stumbled on the one-step dais below the psi-scope. The metal-cased kit sailed over my head and crashed into the glass screen of the psi-scope. It punched a ragged hole in the screen, and I ducked to avoid the flying shards, falling heavily on the dais.

Oh no, Audrey thought, looking past my shoulder. Then, after a moment, *Well, I'm glad you did. Now we'll be apart.*

What did she mean?

I started to brush off the pieces of glass and get up when I suddenly realized that my shoulder was pressing against the warning release under the psi-scope. I eased away with a feeling of horror. The warning would bring a guard cruiser to the station within twenty-four hours, and if we didn't have a good reason for the warning, we'd be courtmartialed.

Economy was a deadly serious matter to the Service. It worked on a strict budget, and a cruiser call might cost as much as 100,000 credits. Cruisers couldn't come running any time a person on one of the 2,500,000 guard stations happened to be lonely. The cost of the Service was so huge already that transportation was kept to a minimum. One call every four years was all a station could expect.

The Service couldn't justify itself by pointing to a clear and present danger, and therefore had trouble every time its budget came up for passage in the Federal Assembly. There were occasional rumors about an alien civilization in another region of the galaxy, but so far nobody had ever seen an "alien" above the pollywog level. There were also stories about whole guard stations vanishing, but I took these tales with a grain of salt.

One thing I knew for sure: the

smashed psi-scope and the warning button meant the end of the line in the Service. Halfway to my retirement—no, *over* halfway—and she had to try bouncing a first-aid kit off my head. With a single motion I rose and lunged for her. "Audrey!" *Audrey!* I went after her with both hands, visualizing death tortures. I opened my mind to let her see the murder in it.

She whimpered and ran for the sleeping quarters and locked the door.

AUDREY didn't come out again until the ship arrived. The cruiser couldn't land, but a two-man launch came down through the chlorinated mist I had given up trying to think of a good reason for the warning and was resigned to being merely dignified in defeat.

I was surprised by the quick arrival of the ship, which took only twelve hours instead of twenty-four to answer our call. When I heard the dome's pressure lock click into operation, I let Audrey know.

You might as well come out now. They're here. Straighten the sleeping quarters. And try to look human for a change.

The guards came in, their space suits still wet from the automatic spray that washed off the chlorine. I helped them take off their helmets. The older man, heavy set and bristle-headed, introduced himself.

"I'm Captain Jayten." He motioned to his companion. "Lieutenant Gorman." Both had a friendly, impartial look, and I took a deep breath.

"What's the trouble?" Jayten asked.

I told it to him straight, including the fact that Audrey and I were both telepaths, stationed together by mistake because some idiot in Assignments had dropped a digit. As I talked, Jayten's slab jaws tightened, and his eyes grew cold and distant. The smile on his face was unpleasant to see. When I was through, he had only a few words to say. He didn't mention courtmartial, but it was written all over his face. He ordered Gorman to take charge of the dome until replacements were sent, and I broke out the space suits Audrey and I would have to wear while walking from the dome to the launch.

I tried to get into Jayten's mind but could catch no more than the usual glimmerings of thought that escape from the consciousness of a non-telepath.

Audrey still hadn't appeared. *Audrey,* I thought, *don't bother powdering your nose. Let's go get courtmartialed.*

It's not my nose, she said. *It's my eyes. The ones you gave me.*

She did a remarkable job on them, all right. At a distance, her skin was fair and undiscolored, and she smiled shyly at the craggy Captain Jayten. For some reason it made me want to slug her again and restore my original handiwork.

THE launch took less than half an hour to bring us up to the cruiser's orbit. The moon's surface underneath us was a roiling blue-green mass, like a vast, puffy cushion. The planet, much larger, glowed above us like a pale sun, and at first I didn't see the cruiser because of the bright light behind it.

It swung in an orbit a thousand miles above the satellite, and when we got nearer I could make out its number, N-2. It was an old-model six-man ship, but in perfect condition. Space ships always looked bright and new if they never came into contact with a planet's atmosphere.

Audrey sat on my lap in the two-man launch, the seat strap around us both. When the acceleration pressed her against me it was like meeting her all over again. I had forgotten how warm and soft she could be, and I remembered the first days when we were together.

The captain's unfriendliness made me feel a little closer to Audrey, and we opened our minds to each other more than we had for six weeks. The captain said nothing more than was necessary to make contact with the cruiser, and his silence worried Audrey as much as anything. She seemed more troubled by the situation than I'd thought she would be, but it was hard for me to pin her down.

Her telepathic powers are different from and better than mine.

I could never get into her mind when she was asleep, for instance, but she could head my dreams any time. That's how our biggest fight started. She caught me in the middle of fine dream about Evie and promptly tried to stuff an oxygen bottle down my throat.

What do you suppose they'll do to us? she asked as we came on board the cruiser and saw the other four guards looking as grim as robots with run-down batteries.

They won't do anything, I said as they showed us to a room the size of a coffin, *except take us back to headquarters. There we'll be disciplined. Kicked out of the service probably. Maybe we can get into communications. We won't starve, but we won't skim the cream.*

Is that all? she said.

The door had shut behind us and we were alone. The room was six by three by six, barely big enough for a double bunk with food and relief tubes. We wouldn't need to undress.

"No, that's not all," I said. "They'll suspend marriage and procreation privileges for five or ten years. Not that I'm in a hurry to marry anybody, but it might make a difference to you."

It did. She went pale and I thought she was going to cry.

"But they can't," she whispered, her eyes filling up with tears. "I didn't think they'd do that."

In the Academy she probably memorized poetry when she should have been reading the Articles of War. Sometimes I think she passed her exams by clairvoyance.

Samm, she said. *I've got to do something. I can't go back. We didn't call the cruiser on purpose.*

It might be better if we had, I said.

She closed her eyes and her face turned up as if she were trying to hear something a light year away. *What*—I started to say.

She waved her hand and said, "Shhh. I'm trying to get the electronic system."

I went into her mind and tried to follow her, but it was too complex. She was trying the other crew members, digging below the conscious level, which was practically silent, to the mass of informational data underneath. She didn't get much, but it was enough.

She came to life and opened her eyes, yanked a hairpin out of her hair, and slid back the door into the narrow corridor.

"Get a pair of space suits," she said, and disappeared. What was she doing? I followed to see.

The corridor was too narrow for running, but I sidled after her as fast as I could. I saw her squeeze around a corner that I estimated was in the middle of the ship, and when I got to the corner I saw her reaching for the ceiling. She had jabbed the hairpin in a crack and was pounding it with the heel of her slipper.

I grabbed her collar and jerked her back just as a muffled "Poof!" came from the ceiling. A three-inch circle of metal melted away, and a dazzling blue-white ball of flame swelled out of the ceiling panel.

By this time the N-2 was gaining acceleration for the dimensional jump that would last almost a whole day and bring us out near the Service headquarters planet. A sudden surge brought Audrey down upon me, and we both tumbled in the corridor. I got my feet under me and scrambled away from the slowly swelling fire.

The ship's on fire, she thought happily. *Now we won't have to go back.*

I pulled her along the corridor to our quarters. Where could I give the alarm? I didn't want to be roasted in space, and I gave her a couple of images of what it would be like to fry and freeze at the same time.

Don't worry, she said. *The fire set off the alarm, too. They know about it. They'll have to stop, then we can take over.*

Take over what? I said. *A cruiser blazing like a sky rocket?*

BUT she was right. Acceleration suddenly stopped, and we were coasting in free fall. Someone clattered down

the corridor, and Jayten appeared in the doorway, his hair burned off and his eyebrows singed.

He was wearing a space suit with the helmet back and dragging two other suits.

"Here," he said, "put these on and follow me. We're going outside."

I started to slug him and run for the two-man launch, but his free hand was too close to his gun. We had to play along for a while. Perhaps if we helped —and if they never found that Audrey started the fire—the courtmartial would give us an easier time of it.

I followed him, pushing the suits ahead of me in the corridor. Just by the escape hatch we had enough room to put them on, and Audrey and I struggled into the suits while Jayten went outside. Another crew member was breaking out fire extinguishers, and he strapped one on each of us.

"Is the fire outside?" I yelled.

"Started inside," he said, "under one of the vanes. But it caught the emergency fuel line and burned out through the hull." He gave the strap on my extinguisher another jerk and said, "We've stopped it in the fuel lines but one corner of the uranium pile is exposed."

The extinguisher on my back would spray a metal skin over the hull and the uranium pile so that they could patch up the ship and get their power plant shielded again.

I went first out of the escape hatch. I jumped off into the blackness of space but misjudged the push I needed and spun away from the ship. For a moment I lost my bearings. The radiant planet was directly ahead of me, and I twisted back toward the N-2, which hung motionless against the stars. Fire had broken through the hull at the base of a vane, and a large section of the metal skin was red. Two figures in space suits were already spraying the fire.

I could see the satellite much further below now, and its misty softness had changed in the distance to a blue opaque shell. The two space-suited figures were being driven back from the fire by the extinguishers' reaction, and they had to keep jockeying into position again.

I grabbed the oxygen nozzle and

[*Turn page*]

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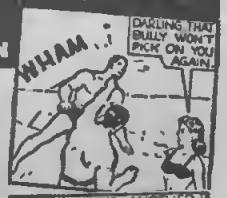

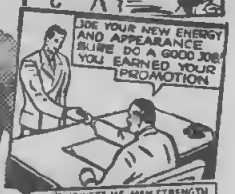

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pointed it behind me. One squirt was enough to send me scooting back toward the N-2. Three others were tumbling out of the hatch, and I knew Audrey was one of them. I heard her voice in my head.

Save some of the metal in your extinguisher, she said. *I have a plan.*

Fine. I didn't, so I could tag along—and stop her before she did something drastic.

I maneuvered into place beside the others fighting the fire, and it didn't take long to skin over the hull and get the power pile under wraps again. I didn't empty my extinguisher, and Audrey didn't explain.

But when we were through, Audrey drifted to my side. She raised the nozzle of her extinguisher and pointed it toward the four men in space suits, now examining the repaired hull.

Spray them! she said.

I pointed my extinguisher and let them have it. They were standing in a group, and one of them started to turn in surprise, but he never had a chance. We froze them in place like metal statues. The liquid metal solidified the joints in their suits and welded them to the cruiser's hull.

Now what? I said to Audrey.

There's one more, she said. *Inside.*

We started for the hatch, and I wished I had a gun. The extinguisher felt useless now. As I grabbed the edge of the hatch, the voice came.

Not inside. I stopped, because the voice didn't come from Audrey. *Behind you.*

I turned and saw the fifth man, pointing a gun at us. It was Jayten, and I'd lost track of him. He could slice us in two with a single shot.

That was a neat trick, he said. *But don't make me kill you.* I couldn't get over the fact that he was a telepath, but I was thinking more about the fact that the courtmartial would throw the book at us now. A mutiny charge perhaps. Maybe I could put Jayten out of action long enough for Audrey to get away . . .

It's time we told them, another voice said, and I knew it must be one of the other crewmen. Another telepath! I didn't have time to think, because I was already diving at Jayten. He leveled the gun at me and a white-hot wave washed over my brain. I heard a gabble of telepathic voices and then blacked out, dropping slowly down into a deep well of unconsciousness.

SOFT hands were stroking my hair, and my head was pressed against something warm and soft. Audrey's voice came in.

You're awake! I tried to move, but my arms and legs were heavy and full of sleep, and my head swam dizzily.

"Where are we?" My voice was rusty, and I had to clear my throat. From the artificial gravity, I could tell the ship was in motion again. I opened my eyes to the narrow cabin.

For answer, Audrey touched a button on the wall, and a viewscreen at the foot of the bunk lit up. It showed the vast radiant surface of the planet, and we were plunging downward. Pitchblende Planet—Audrey's Moon—where the radiation stopped all the scout rockets that were ever sent down.

"It's simple," Audrey said. "They explained it to me while you were asleep."

"While I was asleep." That reminded me. "Why didn't I die?" I said.

"Jayten didn't shoot you. They're all telepaths, and they can hook up in a circuit to paralyze anybody they like."

That figured. "But why couldn't we tell they were telepaths before? We couldn't get more than a whisper from them."

Audrey patted me on the cheek like she owned me and said, "They've got something we could've used. Automatic mind shields. You don't have to be on guard all the time." She held up a small plastic object the size of a bean. "Just slip it in your ear."

This I would have paid a year's salary for when we were fighting and getting on each other's nerves. But I still didn't understand why we were heading for Audrey's Moon. "Why—" I started to

say, when Jayten appeared in the doorway.

Because we're not Service guards, he said. *You might call us a new civilization.* He looked friendlier now, and the harshness had gone away from his face. He sat down on the edge of the bunk. "There are fifty thousand of us," he said.

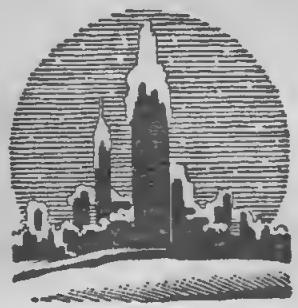
HE EXPLAINED that a group of telepaths, mostly persons tired of the restrictions and discipline of the Service, had been building up for the last hundred years.

They lived on Pitchblende Planet, which glowed as if it were dangerously radioactive, but this was only an atmospheric effect. Other telepaths in the Service had been careful to doctor the

[*Turn page*]

ASTRO-RADIO

By A. Kulik



Across the void they heard a thrum
Of echoes in an interplay;
As if some being tapped a drum
In muted rhythms, worlds away . . . .
And though they could not understand
The message that the drummer wrought
Nor who controlled that drumming hand,
They clutched a truth the drummer brought:

That in this Universe unknown,
The race of Men was not alone....

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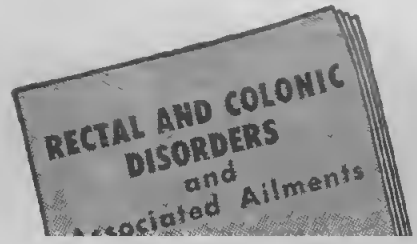

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spectroanalysis reports to make sure that nobody discovered there wasn't an ounce of pitchblende per square mile.

They took care of all scout rockets themselves.

Audrey broke in. "They were watching us for years. They heard everything we said or thought."

I sat bolt upright in the bunk and bumped my head sharply.

"You mean to say they heard me every time I . . ." She blushed, and I looked toward Jayten. He was trying not to grin.

He nodded and said, "Right. Not me, of course, because I don't go in for that kind of thing. Mostly it was the women. They even started calling the planet Audrey's Moon."

"Darling, they thought you were wonderful," Audrey said. "You *were* pretty good at first, you know."

Jayten stopped trying not to grin, and I felt myself getting hot in the face. "Matter of fact," Jayten said, "all the women were in love with you. The men didn't like it and almost voted to keep you off the planet."

This would bear looking into, I decided. I faced Jayten again. "But why didn't you come out in the open before? Why the Service guard act?"

"You'd never have left the Service if you weren't in trouble," Jayten said. "Most people are like that. We wanted you to feel completely alienated to the Service, and then we would have 'rescued' you, pulled you out of a jam. Anybody's glad to escape a courtmartial sentence."

I nodded, and he went on to explain that the station back on the satellite would be destroyed and submerged, as if an oceanquake had broken up the basalt island. The warning hadn't gone through to the Service, and it would be several months before the regular guard ship came to relieve us. It all added up, and when Jayten left us alone, Audrey's face was serene and smiling. I even understood now why the cruiser arrived twelve hours early, and why there had been rumors about "aliens." But I was puzzled still about how things stood between me and Audrey. "No more fights?" I said, looking up at her face. She smiled and kissed me.

"No. We're getting married."

I kept my mind a careful blank and took the bean-like thought shield from her hand and put it in my ear. Now I was safe. "Why are we getting married?" I asked.

"For the same reason I couldn't go back to be courtmartialed." She laughed. "For the same reason I started the fire. For the same reason I got angry when you dreamed about Evie. I've got a secret."

She glowed at me happily and picked the shield out of my left ear. "Listen," she said, and pulled my head against her abdomen. "Two months already."

At first I could hear nothing, but then I caught the faint sounds of an unborn mind drifting lazily in a kind of sleepy warmth.

I don't remember what I said, but it was something like "Darling-why-didn't-you-tell-me-this-before?"

Audrey wept happily and said she had tried, but I was such a beast. I agreed, and we hugged each other.

Then I happened to glance at my watch and saw it was bedtime. Audrey had a faraway look in her eyes and said, "We won't land on the planet for another hour . . ."

The bunk was narrow, but we didn't even know the difference.

WE'VE been here four months now, and it's not bad at all. With the mind shields we can have privacy whenever we need it, and when we want to be together as intimately as possible, we take off the shields and enjoy ourselves.

We're very happy that we're going to have a boy. How do I know it's a boy? I've talked to him, of course. He doesn't have a good vocabulary yet, but he's learning. In fact, only last night I argued with him for an hour to convince him that it's not so bad in the outside world and that he ought to be born. He's as stubborn as his mother.

THE ETHER VIBRATES

(Continued from page 8)

lem than one with a clean one. And until that feeling of shame is removed, which is a problem in itself, another problem can't be solved. Religion enters, removes it, and the person finds himself able to cope with other problems. Therefore it is a helpful prop in the same way that a crutch helps a crippled person get around. The person was crippled . . . in the soul. Personally I can't see where it has anything to do with relaxing by glorifying relaxation.

As for the beginnings of religion, the assigning of conscious being to natural forces, not being what is meant by religion, but only a search for the reasons why things are the way they are is not entirely true. Only in part. True. It was a search for the reasons why things are the way they are. However, in the ancient religion, the sun-god, Re, a deity was conferred upon the sun and was worshiped as a god. They used different rites and different methods of worship, but IT WAS WORSHIP, an adoring of a god.

Even the modern religions, I'll even include the Bible, are a search for the reasons why things are the way they are. Perhaps I should modify my including the Bible. Actually it isn't a search because right off the bat it gives an explanation for the reason why things are the way they are. It explains, not searches. But one could refer to it as science, with reserve of course, because it does explain "why." And that the harmful human instinct involved in religion is laziness is not true. Rather I have found it to be the opposite. Evil, or Satan, has only to exist to put over its influence where one says "there is no God," so "I can do as I please." That's an easy way out. But for Good, or God, to have any influence on one's life there must and has to be an action, an active struggle going on in the person involved.

Religion does give a firm base for power; individual or group power. This power has been misused and the misuse of it has been justified many times, especially in the Middle Ages in the R. C. Church and the Puritans, and to a certain extent at the present time. But is that the fault of religion itself? No! It's the fault of men who use that power to feather their own nest. Atomic power has done a lot of harm since it has been invented. But atomic power itself is not harmful or to blame. But the corrupt minds of men who have used it has made it that way. It can be used to benefit mankind. In the same way religion is not harmful but beneficial. But men can make it harmful.

India and Italy have suffered badly from

[*Turn page*]

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being over-religioned. But look at the religion . . . mere superstition; superstition that robs them of their bread and meat.

But before I finish up this letter I'll personally put a plug in for religion. Religion as a social force will never fail. Proof, you may ask again? I will merely say live, wait, and see.—*1402 Raton, La Junta, Colo.*

That should get a rise from somebody, even though we didn't print the other ten pages of your letter. We've got to have room for the stories.

MORE ON GUNTHER

by Richard H. Stott

Dear Editor: Attention Dr. Gunther and your attackers; your all lunkheads. First Dr. Gunther wrote an article on c/t beings but really messed it up. Metaphysician haters blew his argument to bits but they too missed the meat of the subject.

I believe that I have the answer to this whole stupid mess. Simple reversal of charges in sub-atomic particles is, as has been proved, not enough to reverse the subject's viewpoint on the universe. Dr. Gunther, you don't want positrons and anti-protons, (they *have* been discovered, Mr. Susan) you want something which is anti-matter. If one thinks a bit he will come to the conclusion that the only thing anti-matter in the entire universe is space. Even space has some of the properties of matter (e.g. has boundaries, can be bended, and so forth) but it is the best our science can provide.

So, Dr. Gunther, the true c/t 'matter' would have its electrons and nuclei consisting of absolutely nothing sitting in an electrically charged 'space.' As to the psychology of c/t creatures, someone else may figure that out. Hope this puts an end to this silly business which has been going on for about three months too long at this writing.

If this letter should see print (there's a phrase I just can't understand . . . How can a letter see anything?) I'd like to ask Joe Gibson why he thinks "a planet swinging around and between 4 or 5 suns" should develop anything other than a life-form using Aristotelian logic. Inside information maybe? Hmmm . . . Joe where are you from?—*308 Kings Place, Newport Beach, Calif.*

When last seen, this fellow Stott was putting on his raccoon coat, preparatory to a trip to Florida, where he hoped to sell icebergs to the polar bears. Bet he could do it, too.

NOT SERVILE

by Edward G. Seibel

Dear Editor: I notice on your front cover for this month (Fall) that your advertising department will go to any lengths to put your magazine in the public eye. If you will cast your gaze into the lower left-hand corner, you will see imprinted on the rock on the moon, "A THRILLING PUBLICATION." Now, that's what I call a get-up-and-go advertising department, to advertise on the moon. Any minute now those spacemen will come across this sign, and like all humans, being susceptible to the written word they will rush down to the corner rock and buy a copy of SS.

Let's be careful in our use of the word "servile" or words "almost servile" in connection with my name. Webster defines servile as "slavish . . . fawning," and nothing sounds less like myself, as you well know. It was merely a friendly gesture, to put you in a mood to read my story, when I send it. I had given you more credit for intelligence. Perhaps you were trying a bit of aggravation to make me angry? It'll never work—you can't anger me. I'm always two thoughts ahead of you.

I did read a story this time in your magazine, since I had some time to waste and didn't know what else to do at the moment; now you'll derive some benefit from my comments about the story that I read. I will say one

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thing, it isn't at least one of those with medieval monsters in it, where Flomus flies into the sun on a fire-horse to capture Glyddis. If I want to read that sort of stuff, I'd go to *Bulfinch's Mythology,* which I assure you has a full program of such stuff. Only I never finished the book—it wasn't interesting, it was just that some one swiped it though that I never finished it.—*P. O. Box 445, Olivehurst, Calif.*

You're right about the rock. It was a good publicity idea. But the toughest thing was to bring it here from the moon for Schomburg to copy and then to get it back again the next day before anybody noticed it was missing. Gotta keep those moon readers happy.

THE EDITOR SPEAKS

by Peter J. Vorzimer

Dear Editor: That nice blue cover (like the ribbon I'm using) stood out brilliantly on the stf shelf today. If it weren't for that, I wouldn't have seen SS sitting there as I stooped to pick up the latest MAD comic. However, I found it—and found my name in it. I paused for a minute and thought about it . . . my name in a copy of Startling Stories . . . what an honor! Too bad it couldn't have been under a story!

You neglected to answer what I thought was an important question that I asked in my last letter. I had asked you whether or not you answer personally all the letters that come in that you don't print. I suppose your not answering that question rather answered it, rather than neglected to answer it. (Are you still with me?)

Those Emsh and Finlay illos tempt me. If I ever stop being the fake-fan that I am and get down to reading that crud called science-fiction, I'll promise I'll dig up my old SS's and read those first. It's just me. I can't help it, but I just naturally turn to TEV and start reading. One of these days . . . who knows?

Best letter by far, this ish, is by Jim Harmon. Give that boy a medal. I'm ordering my copy now.

By the bye, if McKinney can plug her zine, why can't I? (please, can I Sam? Pullllease!) I pub a zine called ABstract. It's dittoed with offset covers and runs anywhere from 32 pages up to 100—and only 10¢! We both edit stf mags now, Sam, and I'm tired of paying 25¢ (even though it definitely is reasonable enuf) for SS—so, WHY DON'T WE TRADE? Aha! Now there *is* an idea. Think of all the luscious fanzines you'll get—like ABstract. Man, I'm surprised somebody didn't think of this before. (Somebody did?)

None of the articles I love this time, boy, how on Earth (Your editorial offices are on Earth, aren't they? Or is that N. Y. address just a clever front?) do you expect me to keep buying SS if they don't run those

[*Turn page*]

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most excellent articles or Vorzimer letters?

Well, must waddle off now, and leave this valuable letter space to those sterling letter-hacks like Deeck.—*1311 N. Laurel Avenue, West Hollywood 46, Calif.*

No, we can't possibly give personal answers to letters that don't appear in print, but the fact that your question wasn't answered did answer your question, didn't it?

WHO'S THIS AGAIN?

by Wm. Deeck

Dear Editor: You've done it again! You must have gotten thousands of letters from intelligent fans begging you to make me return. Did you print one? No!? The three people who are my disciples and eulogists just had their names mentioned, followed by something that you must have thought up yourself. Lies, vilifications, and character assassination!

Although I don't keep carbon copies of the letters I write to you, I did notice a slight discrepancy; for instance, you left out the part about . . . No—I'd better not repeat the mistake.

Thom Perry could not have compared me with Fearless Fosdick; FF is too stupid. The person he was referring to was that cute, lovable, little creature from Okefenokee Swamp. Thom's typing must not have been legible.

Many, many laughs this issue. Snarly is back, and he's being very coy. He's going to lead you on until your thimble of joy (me) overflows; then he's going to let you have it—right in your posterior. For that magnanimous deed, all shall be forgiven—even his stupidity.

Has Carol McKinney swayed you by her proposal of marriage? You gonna let her get by saying those hideous things about me?! Euthanasia is too good for her. Girls *are* boy-crazy, Miss (Mrs.) McKinney. They're taught just that as soon as they are born. They learn their lesson well, too.

BROWN: Go right ahead and say whatever you're thinking. I am always glad to have a chance to tell someone what I consider they should know; for example, I am now telling you that you're stupid. Join in on the fun. A great time is had by all—especially the referee, yon editor, who pits one idiot against the other, hoping that the worst man, woman, and/or argument will win.

I shall write an article one day on how to break into the letter columns of the sf magazines. There are so many ways. You can say you love the magazine and its editor, and possibly, with some editors you can say just the opposite. Also, you can start an argument with someone who said something particularly stupid; naturally, the editor being too lazy or not too bright, he will print the letter so that he won't have to argue. I, Wm. (Pronounced Wim Darn good name!) Deeck, am a combination of all. That's why you're not going to print this letter.

So, rather than waste my time writing a letter no one but you will read, I quit.—*8400 Potomac Avenue, College Park, Md.*

So Deeck has finally told us what he is a combination of. Any other combinations occur to anybody?

SEND HIM SOME XENO

by Victor Paananen

The Schomburg cover was good—but of course, not as good as the classic on the April ish.

I liked that Kulik poem about the possibility of neutrons, electrons, etc., being little inhabited worlds. The frightening thought, of course, is that our own universe might be just a mess of 'trons in a bigger world (or universe) Now if that bigger world starts testing A-bombs and our 'trons are in uranium . . . (oh, I'm too young to die!)

Regarding the editorial: I have just read that conveyor belt sidewalks a la Asimov and Heinlein are going to be installed between railway depots in Joisey and are a possibility between Times Square and Grand Central in N. Y. C. More extrapolation coming true!

Now to review the least important part of SS, the stories:

The Marriage Manual: Why must Margaret St. Clair write so well? I always have maintained that women can't write good stuff—so along comes M. St.C.

Got my first fanzine—of which I understood nothing at all. A bunch of characters (and I mean characters—they even out-Deeck Deeck) argue about 6th, 7th, 8th fandom—You mean these S-F'ers come in various sizes?

I've never read a Cap Future story. I guess I'm just a poor unfortunate who'll go thru life never understanding what's so funny when somebody cracks about jugs of Xeno.—*1148 West 8th St., Ashtabula, Ohio.*

What this man needs is not to read a Cap Future story but to drink a jug of Xeno. Then he could reach the 6th, 7th, and 8th fandom, where the real folks live. But keep the stuff away from the man who says he . . .

DIDN'T SEE MAGAZINES

by Johnny Cardona

Dear Editor: I shall begin by explaining my original purpose in writing this letter. First off, I have been reading SF for the past 5 yrs. (I am 21), but I never knew about magazine form SF 'till last Fall. ('Scuse me while I kick myself again.) I had been reading just hard cover SF books. (From libraries, primarily.) So I thought you might insert a few lines in your next issue to let the readers know that I would really appreciate any back issues of any SF they would send me.

I would be deeply grateful, and the condition of said books mean nothing. Horrible mutilation of the books would not lessen my pleasure from them. (I love SF!)

The preceding was my only purpose for writing until . . . . . But wait! Right here let me tell you that this is the first letter I have ever written to an editor (probably the only one).

That's the way my letter would have ended had I not picked up my copy of SS today. I haven't read any of the stories yet, just the letters in TEV. Man, that did it. I'm disgusted beyond explanation. Why? Because I'm fed up with reading letters such as this story is lousy, that author is slipping, etc., etc. I don't consider it being a real SF fan condemning a story because it isn't an Academy Award winner so to speak. Let's face it, they can't all be gems, story after story, issue after issue. Did Irving Berlin or George Gershwin have a smash hit every time they composed a tune? After all, there's work and thought behind all SF stories, and I find them all enjoyable even if they aren't the greatest. As for Jack Vance's story, I certainly wasn't disappointed with it. (Nor any of the others.) Right now my apologies if anyone is fuming at me. I really do enjoy the letters in spite of my opinion.

And finally I would like to tell you that I enjoy your comments as much as the letters. Keep up the good work. (Sure wish SS was monthly tho.)—*2434 Amelia Ave., Scranton 9, Pa.*

P.S. I would really welcome correspondence with any SF'er who cares to write.

No, you definitely don't need any Xeno. However, I hope you get the magazines. Most of the science fiction you'll find in hard cover books appeared in magazines anyhow. As for letters, we try to let people have their say, although we have to edit and select carefully because we've got to get in a good cargo of stories.

AUSTRALIA IS HAPPY

by Pete R. Jefferson

Dear Editor: It happened today! For the first time SS became real! Here in Australia,

[*Turn page*]

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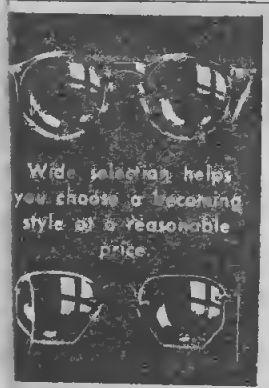

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where occasionally I manage to pick up an emasculated British reprint edition of SS it has always seemed as though SS came out of a vacuum. One story, perhaps two, no Editorial, no TEV made SS completely impersonal. I've often wondered what the U.S. Editions look like, who edited them and who read them.

Then, as I said, it happened! Lo and behold I see my first (I hope not last) *real* SS. Pretty old, very battered (Aug. '53) but *genuine!*

The first thing I read was TEV. Wonderful! SS came alive. No more vacuum! SS is the goods. Which brings me to a vital (to me) point. How can I continue to read SS? They're as scarce as hen's teeth here. Can't buy a subscription—no dollars!

But I can offer British subscriptions in exchange, if any of your readers are interested. I'm sure hoping they are!

Could you spare me just enough print to insert my offer (my plea!) 'Twould be cruel indeed to snatch SS away when I have just found it. Thanks for bearing with me and thanks (in anticipation?).—*41 Mary St., Longueville, Sydney, Australia.*

Your plea is sustained. Now you're on your own.

As for our briefer mentions, we have a letter from J. Martin Graetz, Box 5542, 420 Memorial Drive, Cambridge 39, Mass., asking what the letter deadlines for each issue of TWS, SS, and FSM are. Now that the magazines are quarterly, letters should reach us about three weeks or a month after an issue goes on sale if you want to make the deadline for the next issue. Make it three weeks and give us a break.

Don Taylor, Rte. 1, Anton, Texas, likes science fiction and Jeeves, thought Wallace's story SIMPLE PSIMAN was delightful.

George O'Connor, 419 Fifth Avenue, Watervliet, N. Y., sends us a membership card in Dodos of America. No dues, no meetings to attend. All we have to do is yell vive le dodo on the day of the revolution when the dodos take over the earth.

William W. Miller, Heidelberg College, Tiffin, Ohio, objects to the electronic technicalities in SPACEMAN LOST and to the author's observation about the "passion which comes with the shadow of death." Says Miller skeptically, "A woman who is going to die is going to give herself to a relatively strange man? Pah! Thousands of couples who are *not* about to die and are definitely unsuited to one another get married all the time."

Randy Brown, 6619 Anita St., Dallas 14, Texas, says he's going to put out a fanzine called Interplanetary and wants to start a stf club with anybody else who lives in the Dallas area.

Jim Caughran, 3110 South 44 Street, Lincoln 6, Nebraska, wants us to get his address right. There. Is that right?

Anyone interested in information about the American Astronautical Federation can contact Rinehart S. Potts, 236 East Courtland St., Philadelphia 20, Penn. It was founded last summer and represents eight rocket societies with nearly 1,000 members, including the Chicago Rocket Society and the M.I.T. Rocket Research Society.

Stephen A. Kallis, Jr., 282 Main Street, Winchester, Mass., wonders which stfmag is most popular. Anyone who wants to vote can drop him a postcard listing five favorite magazines in order of preference.

Roger Sims, 16880 Fairfield St., Detroit 21, Mich., can be contacted by anyone interested in a stf fan club in Detroit. The club has been a going concern since 1947.

George Frippel, 162-10 78th Avenue, Flushing 66, N. Y., has been buying and reading back issues, working his way to the present. If we'd just stop publishing for a while, he could catch up, he says.

Richard N. Carpenter, % Rick Radio, 1204 So. Escondido Blvd., Escondido, Calif., is withholding judgment of the Gunther articles until the whole series appears (the final one will appear in our next issue). Meanwhile, he finds the articles irrelevant but interesting.

Walter Scheps, 1102 Longfellow Avenue, Bronx 59, N. Y., think that TEV has taken on an intellectual air lately. He likes it, but wants the humor also.

W. C. Brandt, Oakland 21, Calif., liked SPACEMAN LOST and wants more of the same. Pvt. James W. Mayo was in Tokyo when he wrote, but expected to transfer to Washington, D. C., which he notes is uncomfortably close to College Park, Md., where Deeck lives.

Other long letters from Thom Perry, 4040 Calvert St., Lincoln 6, Nebraska; Dick Clarkson, 410 Kensington Rd., Baltimore 29, Md.; H. S. Clements, 211 Crownfield Road, Stratford, London E. 15, England; Jan (the slan) Sadler, 219 Broadmoor Drive, Jackson 6, Miss.; Pat Scott, 1590 California St., San Francisco, Calif.; and Roy Dixon, R.R. #4, Box 675, Loveland, Ohio. Wish we could print 'em all, but that's it for this issue.—*The Editor.*

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HERE'S HOW TO REDUCE AND STAY SLIM!

Most people are fat because of overeating—too much high calorie fattening foods—to your amazement you will want to keep on eating this delicious candy even after you have reduced to the weight that most becomes you and you'll keep *your weight off that way!*

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The Kelpidine Candy plan is the result of scientific research for years for a new discovery for something that will stop your craving for fattening food and also satisfy your appetite. This delicious candy does not turn into ugly fat, it gives you the same feeling of fullness you have after you have eaten a satisfying meal. It kills your desire to overeat—it kills your craving for bedtime snacks and for in-between meal snacks. It's so safe even a child can take it without bad effects. With Kelpidine Candy all you taste is its deliciousness—you can't tell the difference!

IT'S UNHEALTHY TO BE FAT!

Insurance companies and doctors tell everyone that too much fat shortens your life! Fat people die years sooner than persons with normal weight. So be Safe Be Fair to yourself! Start taking off right fat with delicious tasting Kelpidine Candy plan.

KELPIDINE CANDY IS DIFFERENT!

The amazing clinical *tested* and proven reducing substance contained in Kelpidine Candy is prescribed by many doctors—Don't be misled by imitation products—Kelpidine Candy is the result of scientific research and is the *last word* in Reducing.

DON'T CUT OUT FOODS** CUT DOWN ON CALORIES!

You never starve, you always feel full with Kelpidine Candy plan—You'll never suffer hunger pangs—Your desire for high calorie fattening foods is always *satisfied!* With Kelpidine Candy Plan you eat the same quantity of foods—you merely cut down on the *high calorie rich foods* with the help of Kelpidine Candy. You eat as much as you want, your calorie intake will be *less*—That's the delightful amazing thing!

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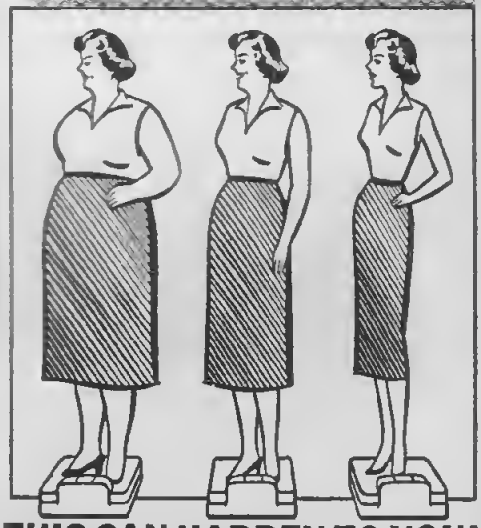

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- ☐ Rush a *Liberal Supply* of Kelpidine Candy plan. I enclose $3.00, send postage pre-paid. (I save up to 75c postage by sending payment with order.)
- ☐ Rush a *Large Economy Supply* of Kelpidine Candy. I enclose $5.00, send postage pre-paid. (I save up to 90c postage by sending payment with order.)

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